CCD-V200E

SERVICE MANUAL

AEP Model
UK Model

BH05

Video 8
PRO

SPECIFICATIONS

System

Video recording system	Rotary two heads, Helical scanning FM system
Audio recording system	Standard: Rotary head, FM system (monaural) PCM: PCM system (2 channels)
Video signal	PAL colour, CCIR standards
Usable cassette	8mm video format cassette
Tape speed	SP: Approx. 20.051 mm/sec. LP: Approx. 10.058 mm/sec.
Recording or playback time	SP: 90 min. (P5–90) LP: 180 min. (P5–90)
Fast forward time	Approx. 4 min. (P5–90)
Image device	CCD (Charge Coupled Device)
Viewfinder	Electric viewfinder (0.7″ black and white)
Lens	Combined 8 × power zoom lens, variable zooming speed (approx. 6 to 11 sec.) f = 11–88 mm, F1.2 with macro Filter diameter: 52 mm
Auto focus system	Infrared autofocus
Colour temperature	Preset values: ☀ 5,800 K 💡 3,200 K Auto: From the light at a tungsten lamp to the light on a slightly overcast day.
Minimum illumination	5 lux (F1.2), (0.5 footcandles)
Illumination range	5 lux–100,000 lux (0.5–9,294 footcandles)
Recommended illumination	More than 300 lux (28 footcandles)
Aperture correction	Automatic, manual (variable)

PCM

Sampling frequency	31.5 kHz
Audio frequency	20–15 kHz
Dynamic range	More than 85 dB
Wow and flutter	Less than 0.005% RMS

Input and output connector

Input	Video input phono jack 1, 1 Vp-p, 75 ohms unbalanced, sync negative Audio input phono jack 2 (stereo), −10 dBs, input impedance more than 47 kilohms
Output	Video output phono jack 1, 1 Vp-p, 75 ohms unbalanced, sync negative Audio output phono jack 3 (stereo and monaural) −10 dBs, output impedance less than 2.2 kilohms
Headphones jack	Stereo minijack, 8-ohm impedance
Microphone jacks	External microphone jack: phone jack −66 dBs low impedance Narration microphone jack: minijack

– Continued on next page –

8 VIDEO CAMERA RECORDER

SONY®

MICROFILM

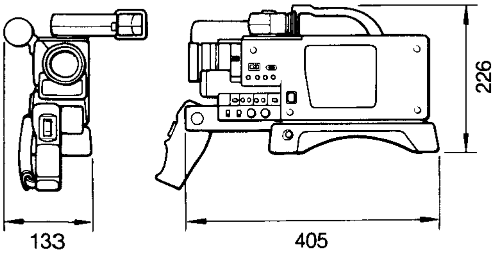
Accessory jacks	Video input: miniphono, 1 Vp-p, 75 ohms unbalanced, sync negative Video output: miniphono, 1 Vp-p, 75 ohms unbalanced, sync negative
Remote connector	5-pin connector

Display in the viewfinder

Mode and caution indication	Small 14 characters × 2 lines
Main title indication	Large 10 characters × 2 lines, 7 colours selectable
Sub title indication	Small, 6 + 8 characters, 7 colours selectable
Date or time indication	Small 8 characters Date: From 1 Jan. 1986 to 31 Dec. 2015 Time: 24 hour cycle
Clock	Crystal lock
Memory back-up	Approx. 2 years using the CR2025 lithium battery

General

Power requirements	Battery compartment 6 V/8.5 V
Power consumption	8.4W (camera recording) including the viewfinder
Installation	Horizontally, vertically
Operating temperature	0°C to 40°C (32°F to 104°F)
Storage temperature	−20°C to +60°C (−4°F to +140°F)
Dimensions	Approx. 133 × 226 × 405 mm (w/h/d) (5¼ × 9 × 16 in.)



Weight	Approx. 3 kg (6 lb 10 oz) excluding the battery and cassette Approx. 3.3 kg (7 lb 4 oz) including the battery and cassette
Microphone	Electret condenser microphone, uni-directional stereo type
Narration microphone	Electret condenser microphone, non-directional monaural type

Accessories supplied

- Shoulder strap (1)
- Lithium battery (1)
- Connecting cord (phono 3–phono 3) (1)
- Ear receiver (1)
- Contact guard* (1 set)

Note
This appliance conforms with EEC Directives 76/889 and 82/499 regarding interference suppression.

* When the input/output jack is not in use, attach the supplied contact guard.
If the guard is lost, we recommend the optional Sony ACK-1 contact guard.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

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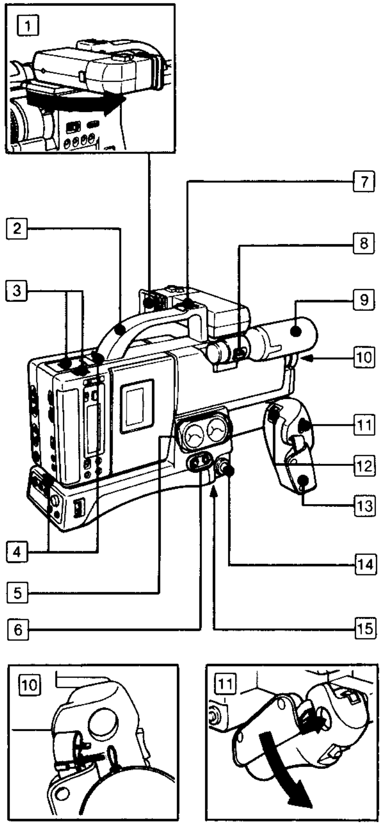
The colour reproduction standard frame is contained after the arrangement diagram of adjustment parts.

SECTION 1
GENERAL

1-1. LOCATION AND FUNCTION OF PARTS AND CONTROLS

A-1



For details on the use of each control, refer to the pages indicated in the circle.

A-1

1 **Viewfinder**
The picture being recorded or played back can be monitored in monochrome through this viewfinder. Data such as the tape counter, function mode, caution indicators, recording title, date, time, are also displayed on the viewfinder screen.

2 **Handle**

3 **Battery compartment and battery eject switch**
Insert a battery pack, AC pack or DC pack.

4 **Hooks for shoulder strap**

5 **PCM LEVEL METERs and lamp**

6 **MIC (external microphone) jacks (phone)**

7 **Accessory shoe**
Attach an optional external microphone, video light, etc.

8 **LOW CUT FILTER switch**
To cut wind noise, etc., set to ON.

9 **Built-in stereo microphone**

10 **Lens cap**

11 **Release button**
Press to unlock the hand grip when adjusting the grip position.

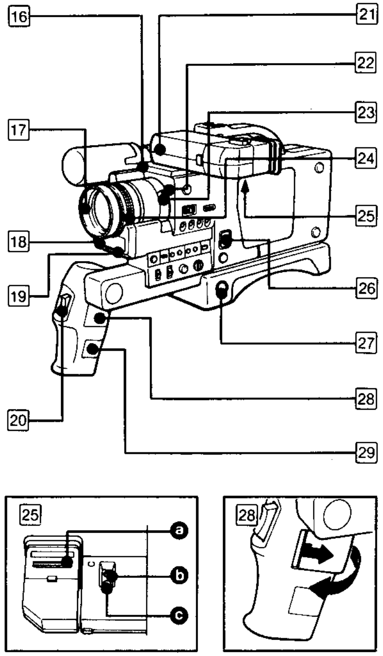
12 **START/STOP button**
Press to start or stop camera recording.

13 **Hand grip and grip strap**

14 **REC (recording) LEVEL controls**
Adjust the volume of the external stereo microphone or the signal from the AUDIO IN jack.

15 **Tripod receptacle**

A-2



A-2

16 **White balance sensor**
This is the sensor for the auto white balance adjustment. Be careful not to cover it.

17 **Lens hood**

18 **Infrared beam detector**
The infrared beam reflected from the object to be shot is received here during auto focusing.

19 **Infrared beam emitter**
Transmits an infrared beam toward the object to be shot during auto fucusing. Do not look into it for a long time when recording with auto focusing.

20 **Power zoom button**
Press for smooth power zooming between wide-angle (W) and telephoto (T) positions.

21 **Camera recording/battery lamp**
Lights during camera recording. It blinks when the battery is exhausted.

22 **Macro set button**
Keeping this button depressed, move the manual zoom lever within the MACRO range for close-ups.

23 **Manual zoom lever**

24 **Focus ring**
For manual focusing, turn this ring to focus while looking through the viewfinder.
This ring will be turned automatically during auto focusing.

25 **Bottom of the viewfinder**
ⓐ **Viewfinder lens adjustment lever**
Adjust to your eyesight to assure good focus.
ⓑ **Focus control screw**
ⓒ **Brightness control screw**
Normally, there is no need to adjust these screws. Adjust only when the picture is not displayed clearly.

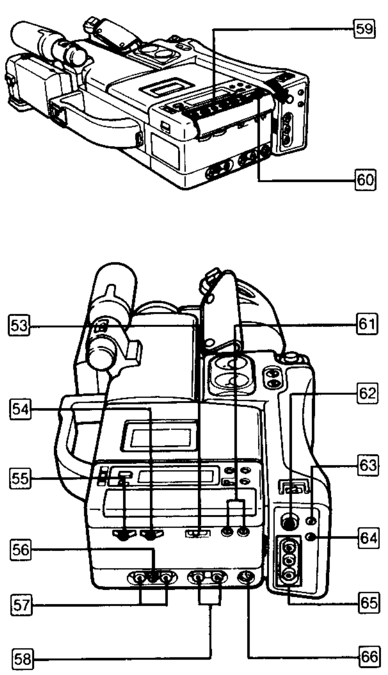
26 **NARRATION MIC (microphone)**

27 **PUSH TO NARRATE button**

28 **Utility compartment**
Insert the ear receiver, etc.

29 **Lithium battery compartment**

A-5



A-5

53 **AUDIO MONITOR switch**
Selects the sound to be heard during playback.

54 **FRAME ADJ (adjustment) control**

55 **STILL ADJ (adjustment) control**

56 **RFU DC OUT jack (special mini)**
Connect the RFU-89E/AS RFU adaptor, etc.

57 **VIDEO/AUDIO OUT jacks (phono)**

58 **AUDIO OUT jacks (phono)**

59 **Tape transport buttons**
◀◀ (rewind), ▶ (playback), ▶▶ (fast-forward), ■ (stop), ❚❚ (pause), ❚❚▶ FRAME (frame-by-frame playback)

60 **REC (recording) switch**
Slide to the right to start recording.

61 **ACCESSORY IN/OUT jacks** (miniphono)
Connect an optional colour corrector, etc.

62 **PHONE LEVEL control**

63 **PHONES jack (stereo mini)**

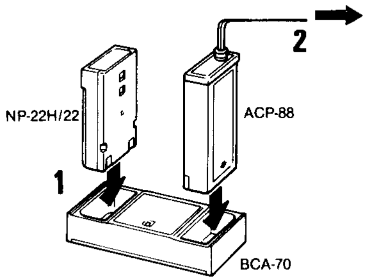
64 **NAR. MIC (narration microphone) jack (mini)**
Connect the microphone cord of the DR-200C (optional) headphone equipped with the microphone.

65 **VIDEO/AUDIO IN jacks (phono)**

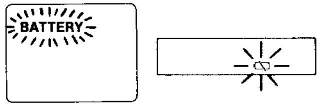
66 **REMOTE connector (5-pin)**
Connect an optional Remote Commander, editing controller, etc.

1-2. POWER SOURCES

B-1



B-2



NP-22H/22 Battery Pack

How to charge
Use the ACP-88 AC pack and the BCA-70 battery charge adaptor.

B-1
The charging time is about 2 hours for an NP-22H battery pack, or about 1.5 hours for an NP-22 battery pack.

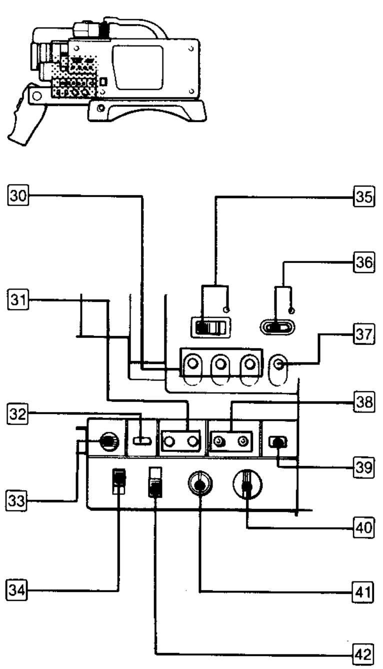
1 Insert the battery and the AC pack with the metal contacts facing as illustrated.
2 Connect to the mains outlet.

When the battery is fully charged, the charging will stop automatically and the CHARGE lamp of the battery charge adaptor will go out.

Battery Life
A fully-charged NP-22H battery provides approximately 1 hour of continuous operation and an NP-22 provides approximately 45 minutes of continuous operation.
When the battery becomes weak, the battery indicators appear on the viewfinder screen and in the display window. Replace the battery with the fully charged one. B-2

Notes
- The video camera recorder consumes power even in the recording pause mode. Therefore, for every hour's worth of tape you shoot, plan to use 2 to 3 hours' worth of battery power.
- If the battery pack is not fully charged or if it is used in a cold place, its operating time is also shortened.

A-3



A-3

30 TITLE +/– buttons and NEXT button
Used to set the colour and characters of the title, date, time, and colour of the wiper.

31 DATE and TIME buttons
Press to display or turn off the date or time.

32 FADER/WIPER button
Press to select the fader, wiper or normal mode.

33 PUSH AUTO button
Keep it depressed to activate the auto focusing if in the manual focusing mode.

34 FOCUS switch
Normally set to AUTO for the auto focusing. To focus manually, set to MAN (manual).

35 CAMERA POWER switch and lamp
Used to turn on and off the camera section.

36 INTERVAL REC (recording) button and lamp
Press to activate the automatic interval recording function. The lamp lghts during interval recording.

37 CLEAR button
Press to clear the preset main or sub title.

38 TITLE MAIN and SUB buttons
Press to display or turn off the main and sub titles.

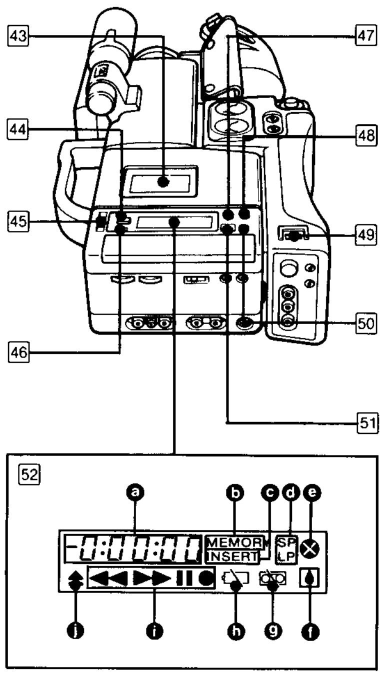
39 REC REVIEW (recording review) button
Press to play back the end of the previously recorded part for several seconds.

40 SHUTTER speed control
Used to select the shutter speed.

41 IRIS control
Normally set to AUTO.

42 WHITE BAL (white balance) switch
Normally set to AUTO for the auto white balance adjustment. Set it to ☀ (outdoors) or ∴ (indoors) according to lighting conditions.

A-4



A-4

43 Cassette compartment

44 VTR POWER switch and lamp
Used to turn on and off the video recorder section.

45 ⏏ (cassette eject) switch

46 REC MODE (recording mode) selector
Select the recording tape speed, LP or SP.

47 RESET button
Press to reset the counter to zero.

48 MEMORY button
Press to return the tape to the counter zero point.

49 AUDIO DUB (dubbing) switch and lamp
Slide to dub the audio signals.

50 INSERT button
Press to insert a new picture and sound onto a previously recorded tape.

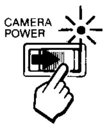
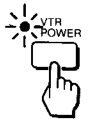
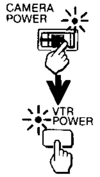
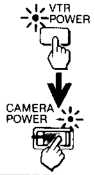
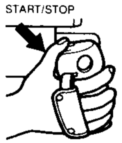
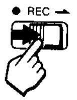
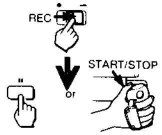
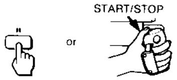
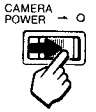
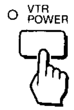
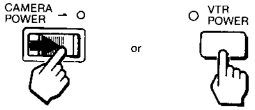
51 EDIT switch
Normally keep this switch at the left position. When editing a tape, set to EDIT.

52 Display window
ⓐ Tape counter
ⓑ MEMORY indicator
ⓒ INSERT indicator
ⓓ Tape speed indicator
ⓔ Lights when the slit in the head is clogged.
ⓕ Blinks when moisture has condensed inside the unit.
ⓖ Lights steadily when no cassette is inserted. Blinks when the tape approaches its end.
ⓗ Blinks when the battery is weak.
ⓘ Tape operation mode indicators
ⓙ Blinks when moisture has condensed on the tape, when the tape approaches its end during camera recording or when the tape does not run normally. Lights steadily when the cassette is being unloaded.

1-3. THREE MODES OF OPERATION

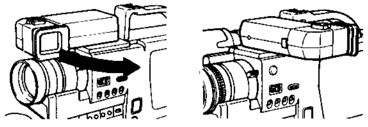
The CCD-V200E video camera recorder is equipped with two power switches, the CAMERA POWER switch and VTR POWER switch. Press either or both of these switches according to the operating modes below.

Modes and their uses

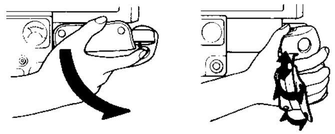
Operating mode	CAMERA mode	VTR mode	VTR-CAMERA mode	
Use	• Camera recording only	• Tape playback • TV programme recording • Tape editing	• Alternating camera recording and tape playback • Insert camera recording	
To turn the power on	**Slide CAMERA POWER to the right.** 	**Press VTR POWER.** 	**Slide CAMERA POWER to the right and then press VTR POWER.** 	**Press VTR POWER and then slide CAMERA POWER to the right.** 
The unit is set to	Recording standby mode	Stop mode	Stop mode	Recording standby mode
To start recording	**Press START/STOP.** 	**Slide REC to the right.** 	**Slide REC to the right and press II or START/STOP.** 	**Press II or START/STOP.** 
To turn the power off	**Slide CAMERA POWER to the right.** 	**Press VTR POWER.** 	**Press either CAMERA POWER or VTR POWER.** 	

1-4. PREPARATIONS FOR CAMERA RECORDING

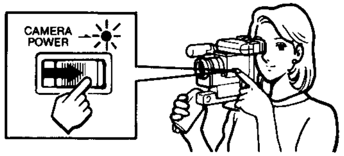
D-1



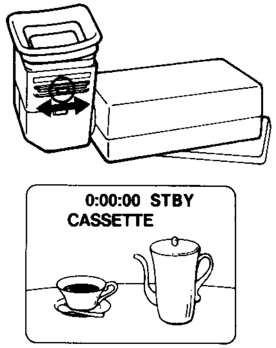
D-2



D-3



D-4



1 **Set the viewfinder.** D-1
Turn the viewfinder until it locks (90 degrees).

2 **Set the grip.** D-2
❶ Pressing the release button, turn the grip until it locks.
❷ Hold the grip so that your thumb and forefinger can minipulate the START/STOP button and the power zoom button respectively.
❸ Adjust the length of the grip strap.

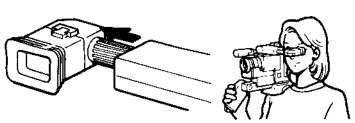
3 **Slide the CAMERA POWER switch to the right.** D-3

4 **Position the video camera recorder.** D-3
Remove the lens cap.
For stable shooting, rest the unit on your shoulder while holding the upper arm firmly against your body.

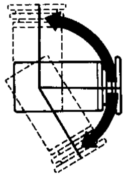
5 **Adjust the position of the viewfinder lens.** D-4
Turn the viewfinder upward and adjust the viewfinder lens adjustment lever so that the indications displayed on the viewfinder screen come into sharp focus.

This adjustment is necessary only when you use the camera for the first time or after another person has used it, because the distance of optimum vision varies from person to person.

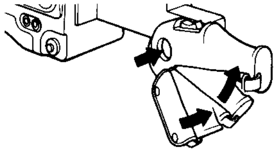
D-5



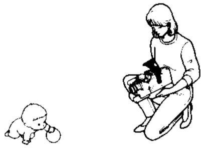
D-6



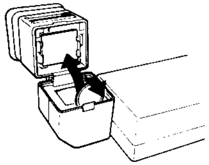
D-7



D-8



D-9



To view with your left eye D-5
Pull out the viewfinder until it locks.

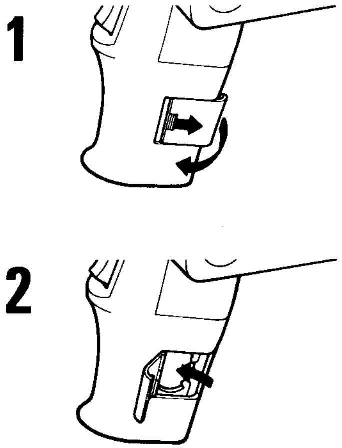
To change the angle of the viewfinder D-6
The viewfinder can be turned 90 degrees up and 60 degrees down to make high-angle or low-angle shooting possible.

To change the angle of the grip D-7
The grip can be set to one of four positions. Pressing the release button, turn the grip until it locks at the desired position.

When shooting from a low angle D-8
Fold the grip in place, turn the viewfinder upward and hold the camera as illustrated.

To remove dust from inside the viewfinder D-9
Open the finder cover with an object like a coin as illustated and remove the dust with a blower.

D-10



Date/Time Setting

To insert the lithium battery D-10
This unit uses a lithium battery to activate the clock and to keep the titles in memory. Before operating the unit for the first time, install the supplied lithium battery.

1 Open the cover of the lithium battery compartment on the grip.
2 Install the supplied CR2025 lithium battery with the ⊕ side facing out.
3 Close the cover.

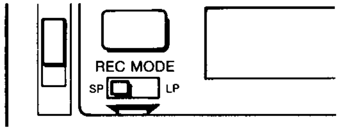
To remove the lithium battery
Press the side of the battery in the direction as indicated for installation.

Lithium battery life
Approximately 2 years in normal operation.
When the lithium battery becomes weak, the time indication will blink on the viewfinder screen for several seconds immediately after the CAMERA POWER switch is turned on.

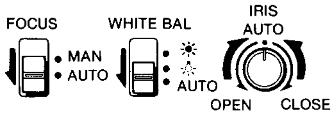
Notes on lithium battery
- Keep the lithium battery out of the reach of children. Should the battery be swallowed, immediately consult a doctor.
- Wipe the battery with a dry cloth to assure a good contact.
- Be sure to observe the correct polarity when installing the battery.
- Do not hold the battery with metallic tweezers, otherwise a short-circuit may occur.
- Do not break up the battery nor throw it into a fire, which might cause it to explode. Carefully dispose of the used batteries.

1-5. EASY CAMERA RECORDING WITH AUTOMATIC ADJUSTMENT

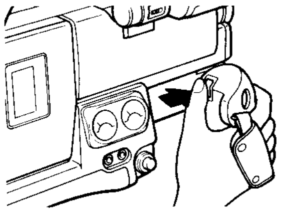
E-1



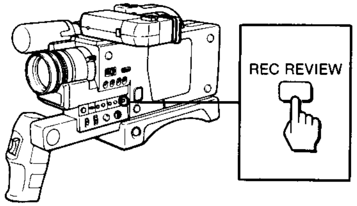
E-2



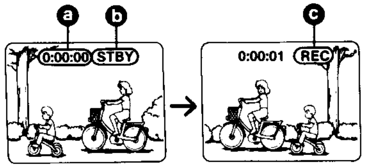
E-3



E-4



E-5



Operation

1. **Slide the CAMERA POWER switch to the right so that the lamp lights up and insert a cassette.**

2. **Set the REC MODE selector to LP or SP, according to the length of the programme to be recorded.** E-1
   The recording time of a cassette in the LP mode is twice as long as that in the SP mode.

3. **Set the following selectors to the standard position (green position) for automatic adjustments.** E-2

   FOCUS → AUTO (auto focusing)
   WHITE BAL → AUTO (linear auto white balance)
   IRIS → AUTO (auto iris)

4. **Position the camera and press the START/STOP button.** E-3
   The subject seen through the viewfinder and the sound picked up through the microphone can be recorded.

5. **To stop recording, press the START/STOP button.**
   The unit will enter recording pause mode.

6. **To check the last scene of the previous recording, press the REC REVIEW button.** E-4
   The last few seconds of the recorded scene are played back in reverse, and then played back normally. Then the unit will enter recording pause mode.

To resume recording
Simply press the START/STOP button.

Check on the viewfinder screen E-5
ⓐ Tape counter
ⓑ STBY: Displayed during recording pause mode.
ⓒ REC: Displayed during recording.

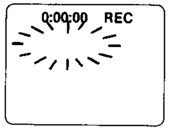
If you leave the unit in the recording pause mode for 7 minutes or more, the power will be automatically turned off.

To turn the power off
Slide the CAMERA POWER switch to the right again.

Notes on camera recording
- During recording, do not cover the white balance sensor and the infrared beam emitter or the detector.
- During recording with auto focusing, do not turn or stop the focus ring forcibly.
- Keep the lens and the infrared beem detector clean.
- Should you shoot a subject in bright conditions such as sunlight just after shooting in a dark place, the picture may not appear on the viewfinder screen. In this case, move the camera away from the subject to resume the normal condition.
- A vertical band may appear when a subject such as a candle flame or a light is shot against a dark background.
- When removing and attaching the lens hood, hold the focus ring.
- If there is insufficient light, the auto focusing and linear auto white balance do not operate properly. Add an appropriate light.
- The camera recording with automatic adjustment may not produce optimum results under certain conditions or ambient lighting. In this case, manually adjust the focus, white balance and iris. See pages 13 and 14.

Caution Indicators on the Viewfinder Screen E-6

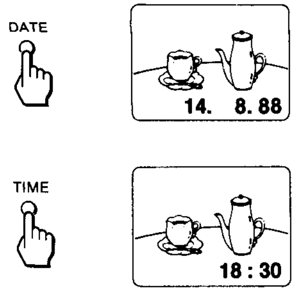
E-6



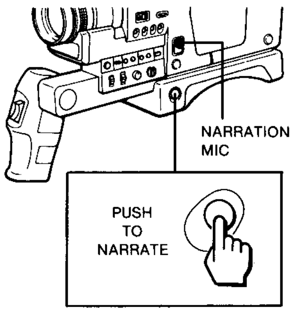
A caution indicator will be displayed below the tape counter on the viewfinder screen.

BATTERY	Blinks slowly, then rapidly.	The battery is exhausted.
TAPE END	Blinks slowly, then rapidly.	The tape approaches and then reaches its end.
CASSETTE	Blinks.	• No cassette inserted. • The safety tab is out.
DEW	Blinks.	Moisture condensation inside the unit.
CAUTION	Blinks.	• Moisture condensation on the tape surface, etc. • The slit in the head is clogged. → Clean the head using a cleaning cassette.

E-7



E-8



To Record the Date or Time E-7

During camera recording or in recording pause mode, press the DATE or TIME button to display the date or time on the viewfinder screen.
If the unit is set to recording mode, the date or time being displayed will be recorded together with the picture.

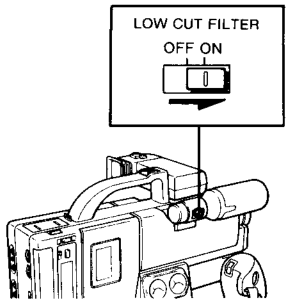
To stop recording the date or time, press the DATE or TIME button again. The picture recording will continue.

Note
The date or time can be recorded only during a camera recording. To insert the date or time while editing a tape, see "Insert Recording" on page 23.

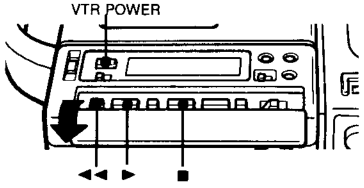
To Dub the Narration during Recording E-8

Press the PUSH TO NARRATE button. With the PUSH TO NARRATE button kept pressed, the sound from the NARRATION MIC is recorded. (While dubbing the narration, the sound from the external stereo microphone is recorded in the stereo PCM mode.)

E-9



E-10



To Cut Wind Noise, etc. E-9

Set the LOW CUT FILTER switch to ON to cut the low frequency.

Monitoring the Playback Picture on the Viewfinder Screen E-10

1 Press the VTR POWER switch to set the unit to VTR mode.
2 Press the ◀◀ button to rewind the tape.
3 Press the ■ button to stop the tape.
4 Press the ▶ button to start playback.
The playback picture will appear on the viewfinder screen.

To monitor the playback sound, connect the supplied ear receiver to the PHONES jack.

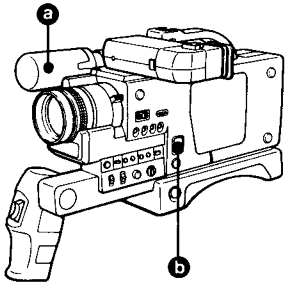
To turn the power off
Press the VTR POWER switch.

Note
The playback picture and sound may be affected in a moving vehicle.

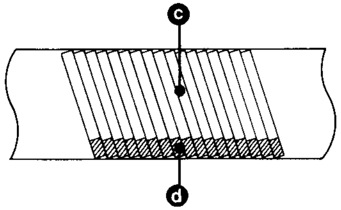
Smooth Recording

Smooth recording can be made even if the recording is stopped and started again, or even if the power is turned off and on again, provided that the cassette is not removed. But, if the cassette has been removed, proceed as follows.
1 First slide the CAMERA POWER switch to the right and then press the VTR POWER switch. (VTR-CAMERA mode)
2 Press the ▶ button.
3 Locate the point from which the recording is to begin again by monitoring the playback picture on the viewfinder screen, and stop the tape with the ❚❚ button.
4 Slide the ● REC switch in the direction of the arrow to set to recording pause mode.
5 Press the START/STOP button to start recording.

E-11



E-12



Recording will be made as follows

Audio signals are recorded as follows according to the microphone(s) to be used.

E-11

ⓐ: Stereo microphone
ⓑ: Narration microphone

E-12

Enlarged view of the tape
ⓒ: Standard track
ⓓ: PCM track

When the narration microphone is not in use

ⓒ: **Standard track**
Video and audio signals from the stereo microphone are recorded. Recorded sounds are monaural.

ⓓ: **PCM track**
Audio signals from the stereo microphone are recorded in stereo PCM sound.

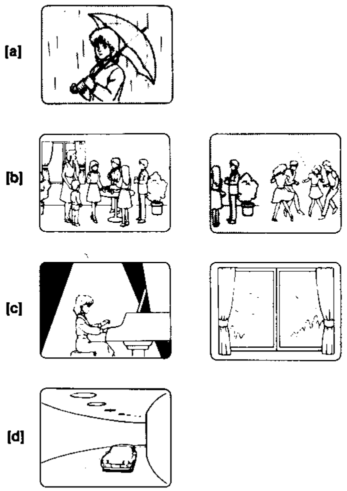
When the narration microphone is in use

ⓒ: **Standard track**
Video and audio signals from the narration microphone are recorded. Recorded sounds are monaural.

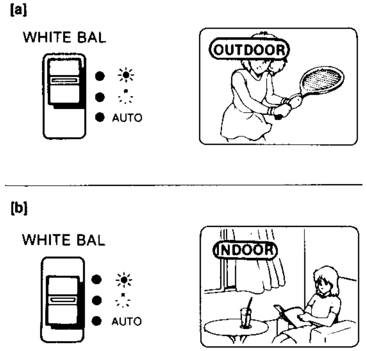
ⓓ: **PCM track**
Audio signals from the stereo microphone are recorded in stereo PCM sound.

1-6. WHITE BALANCE

G-1



G-2



In most cases, the linear auto white balance function of this unit adjusts the white balance automatically. However, if it does not work correctly in the conditions listed below, set the WHITE BAL selector to ☀ or ⁘ according to the lighting condition.

Difficult Conditions for Linear Auto White Balance G-1

[a] Insufficient light
[b] When lighting conditions change quickly
[c] When the light source for the subject is different from that illuminating this unit
ex. when the subject is in a spotlight, or when the subject is outdoors but the camera is indoors, etc.
[d] Special light sources such as natrium lamps, etc.

How to Set the WHITE BAL Selector G-2

[a] **Recording outdoors**—Set to ☀. (5,800 K)
[b] **Recording indoors**—Set to ⁘. (3,200 K)

Recommended setting for various subjects

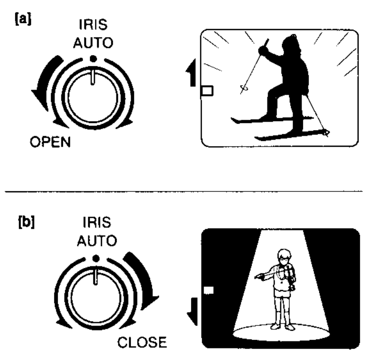
☀ :sunset, fireworks, subjects in a sunny window, etc.
⁘ :candle flames in darkness, subjects in the spotlight, scenes before sunrise, subjects in a tunnel (illuminated by natrium lamps), etc.

What is the white balance?
The colour of the subject being recorded can be affected by the ambient light. White balance adjustment is necessary for compensating for this colour variation, so that a white subject, for example, can be recorded white without reference to the light source.

Linear auto white balance system
The auto white balance system of this unit utilizes the white balance sensor located below the built-in microphone to determine the colour temperature of the ambient light and adjust the white balance accordingly. As the ambient lighting condition changes gradually, such as in twilight, the white balance will be readjusted automatically. As the sensor is built in the unit, however, optimum white balance adjustment cannot be obtained if the subject and this unit are under different lighting conditions.

1-7. IRIS ADJUSTMENT

H



Iris Adjustment H

The iris is adjusted automatically with the IRIS control set to AUTO. When shooting a scene with strong contrast, adjust the IRIS control.

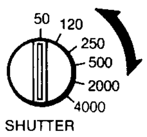
[a] When backlit shot results in the subject being too dark → Turn IRIS toward OPEN.
[b] When a subject is too bright against a dark background → Turn IRIS toward CLOSE.

When the IRIS control is turned, the white mark moves at the left side of the viewfinder screen.

After shooting that particular scene, reset the IRIS control to AUTO.

1-8. SHUTTER SPEED ADJUSTMENT

I-1

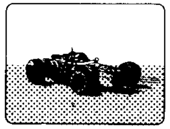


When the shutter speed is fast, subjects moving at high speed, such as a moving golf ball or tennis ball, can be recorded clearly.
Six shutter speeds can be selected on this unit: 1/50 (normal speed), 1/120, 1/250, 1/500, 1/2000, 1/4000. I-1

Recommended shutter speed settings
The faster the shutter speed is, the better faster movements of the subjects can be followed but the recorded picture becomes darker. Select the appropriate shutter speed while observing the brightness of the picture on the viewfinder screen.

Example use	Recommended shutter speed
• On clear days, recording golf or tennis scenes (To view the hit ball clearly in the pause mode, set to 1/4000) • Recording the skiers	1/4000 or 1/2000
• On overcast days, recording a moving merry-go-round or jet-coaster • Recording outdoors from inside a vehicle (for stable shooting)	1/500 or 1/250
• Instead of the ND2 filter (To reduce the exposure level to approx. 1/2) • Recording indoors (for stable shooting)	1/120

I-2

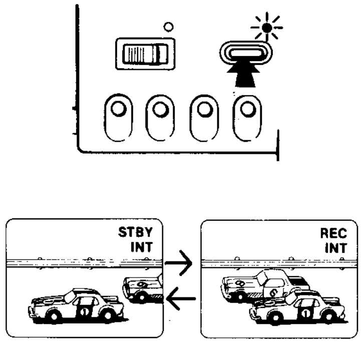


A noiseless still, frame-by-frame and slow pictures are obtained when the picture recorded with the faster shutter speed is played back.

Notes
- When the shutter speed is changed during a camera recording of a TV screen, the brightness of the recorded picture may vary in a signal image. I-2
- When a very bright object is shot with a faster shutter speed, a light, vertical, belt-like line ("smear") may appear on the screen. This is not a failure of the unit.
- When shutter speed 1/250 or more is selected, recording must be done under sunlight or video light.
- When the recording is done under a light discharged tube, such as a fluorescent lamp, sodium lamp, or mercury lamp, the brightness of the recorded picture may vary ("flicker").

1-9. AUTOMATIC INTERVAL RECORDING

L



A very short recording of 8 frames will be activated repeatedly at 15-second intervals, simply by pressing the INTERVAL REC button. L

1 Slide the CAMERA POWER switch to the right to set the unit to the recording pause mode.
2 Press the INTERVAL REC button.
The INTERVAL lamp will light and the unit will enter the interval recording mode.

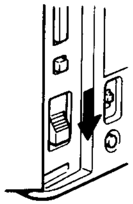
A very short recording of 8 frames will be made at 15-second intervals and the recording pause mode will resume. This procedure is repeated for approximately 30 minutes and then the unit will remain in the recording pause mode.

The pause mode will be released automatically after about 7 minutes and the unit will be turned off.

To stop the interval recording
Press the INTERVAL REC button to turn the INTERVAL REC lamp off.

1-10. FRAME RECORDING

M



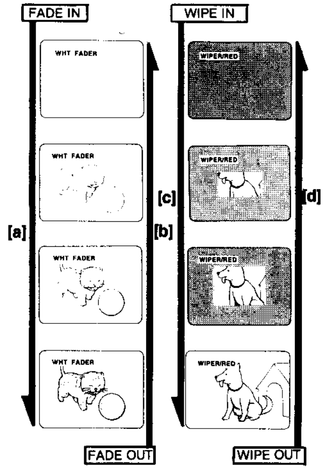
A very short recording of 8 frames can be activated manually for creating an animated programme of your own. M

1 Press the VTR POWER switch and then slide the CAMERA POWER switch. The unit is set to recording pause mode.
2 Slide the ● REC switch in the direction of the arrow.
A recording of 8 frames will be made and the recording pause mode will resume.
3 Move the object a little and repeat step 2 as many times as you like.

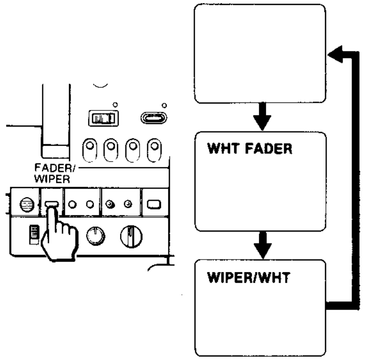
When the recording pause mode lasts for more than approximately 7 minutes, the pause mode will be automatically released and the unit will be set in the stop mode.

1-11. FADER AND WIPER

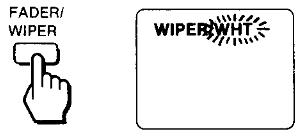
N-1



N-2



N-3



With the fader and wiper functions, you can add dramatic effects at the beginning, at the end, or in other portions of the video programme you are recording. N-1

[a] **Fade in**—the picture and sound will come gradually from a white, silent scene.
[b] **Fade out**—the picture and sound will go out gradually until a white, silent scene is reached.
[c] **Wipe in**—the picture will become visible gradually from the center of the screen and the sound volume will increase.
[d] **Wipe out**—the picture will go out of sight gradually toward the center of the screen and the sound volume will decrease.

The colour of the fader is white only, while the colour of the wiper can be selected among 7 colours.

How to press the FADER/WIPER button
- Each time the FADER/WIPER button is pressed momentarily, the unit will be set to the following three modes consecutively. N-2

Normal mode → FADER mode → WIPER mode

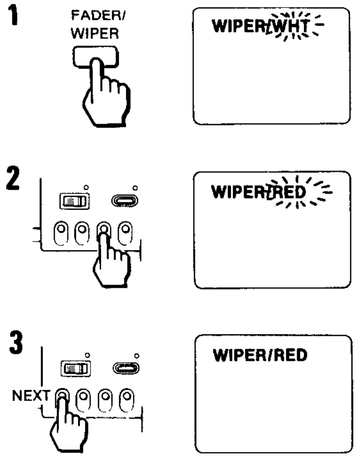
- When the FADER/WIPER button is kept pressed for more than 3 seconds in any mode, the unit will enter the wiper colour setting mode. The colour indicator blinks on the viewfinder screen. N-3

Fader Operation

To fade in
1 Slide the CAMERA POWER switch to the right to set the unit to the recording pause mode.
2 Press the FADER/WIPER button **once** to set the unit to FADER mode.
3 Press the START/STOP button to start camera recording.

To fade out
1 During camera recording, press the FADER/WIPER button **once** to set the unit to FADER mode.
2 Press the START/STOP button to stop recording.

N-4



Wiper Operation

To set the colour of the wiper N-4

1 Press the FADER/WIPER button **for more than 3 seconds** to set the unit to wiper colour setting mode.

2 Press the + or − button repeatedly until the desired colour indicator appears.

WHT (white), BLUE, GRN (green), CYAN, RED, VIO (violet), YEL (yellow)

3 Press the NEXT button to memorize the setting.
The colour indicator lights steadily.

To wipe in

1 Slide the CAMERA POWER switch to the right to set the unit to the recording pause mode.

2 Press the FADER/WIPER button **twice** to set the unit to WIPER mode.

3 Press the START/STOP button to start camera recording.

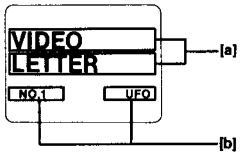
To wipe out

1 During camera recording, press the FADER/WIPER button **twice** to set the unit to WIPER mode.

2 Press the START/STOP button to stop recording.

1-12. RECORDING A TITLE

O-1



A main title and a sub title can be created and recorded together with the picture.

O-1

[a] **Main title:** 10 characters × 2 lines, displayed in large characters
[b] **Sub title:** 6 + 8 characters, displayed in small characters

- Selectable colours:

  WHT (white), BLUE, GRN (green), CYAN, RED, VIO (violet), YEL (yellow)

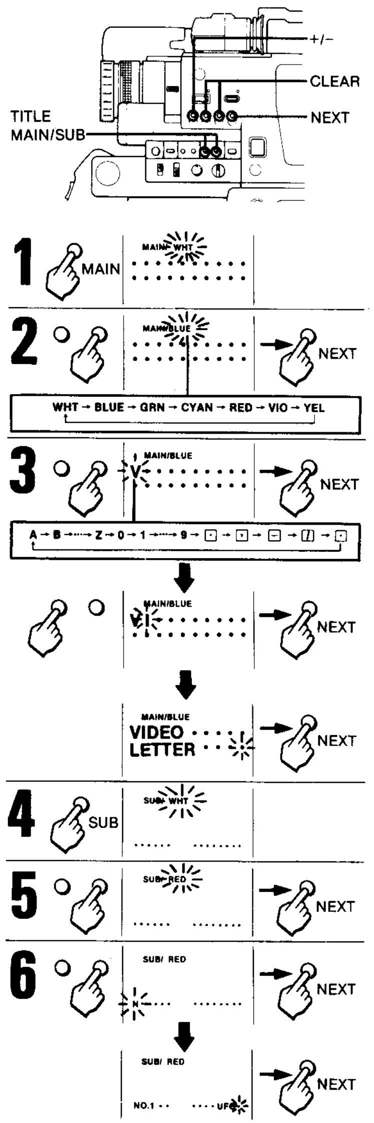
- Selectable characters:

  alphabet, numerals, 4 symbols (period, apostrophe, hyphen and slash), space

Before setting the titles

- Make sure that the lithium battery is installed. See page 10.
- Slide the CAMERA POWER switch to the right to set the unit to CAMERA mode. (If a cassette is inserted, the power will be turned off automatically in 7 minutes.)
- Lift up the viewfinder lens for easier viewing.

O-2


+/-
CLEAR
NEXT
TITLE
MAIN/SUB
1
MAIN
MAIN/WHT
2
MAIN/BLUE
NEXT
WHT → BLUE → GRN → CYAN → RED → VIO → YEL
3
MAIN/BLUE
V
NEXT
A → B → ····· → Z → 0 → 1 → ····· → 9 → □ → □ → □ → □ → □
MAIN/BLUE
VI
NEXT
MAIN/BLUE
VIDEO
LETTER
NEXT
4
SUB
SUB/WHT
5
SUB/RED
NEXT
6
SUB/ RED
N
NEXT
SUB/ RED
NO.1
UFO
NEXT

Title setting O-2

1 Press the MAIN button **for more than 3 seconds.**
The MAIN title will appear on the viewfinder screen and the colour indicator will blink (main title setting mode).
2 Set the colour with the +/– buttons, and then press the NEXT button.
3 Set the characters one by one, with the +/– buttons and the NEXT button.*

> When the last character is set, press the NEXT button until the setting screen disappears. The main title will be memorized.

4 Press the SUB button **for more than 3 seconds.**
The SUB title will appear and the colour indicator will blink (sub title setting mode).
5 Set the colour with the +/– buttons, and then press the NEXT button.
6 Set the characters one by one, with the +/– buttons and the NEXT button.*

> When the last character is set, press the NEXT button until the setting screen disappears. The sub title will be memorized.

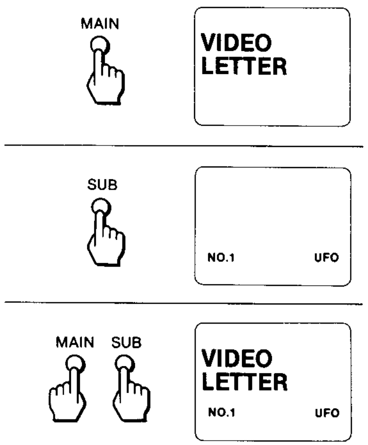
* To set a space, press the NEXT button without pressing the +/– buttons. The dot remains displayed during setting.

To check the title
To check the main title, press the MAIN button.
To check the sub title, press the SUB button.
To turn off the title, press the same button again.

To clear the title
Set the unit to the main or sub title setting mode and press the CLEAR button.

To change a part of the title
Set the unit to the main or sub title setting mode and press the NEXT button repeatedly until the desired character blinks. Change it with the +/– buttons and press the NEXT button until the title disappears.

O-3


MAIN
VIDEO
LETTER
SUB
NO.1
UFO
MAIN
SUB
VIDEO
LETTER
NO.1
UFO

To Record the Title O-3

During camera recording or in recording pause mode, press the MAIN button and/or SUB button to display the main title and/or sub title.
If the unit is set to recording mode, the title(s) will be recorded together with the picture.

To stop recording the title(s), press the MAIN button and/or SUB button. The picture recording will continue.

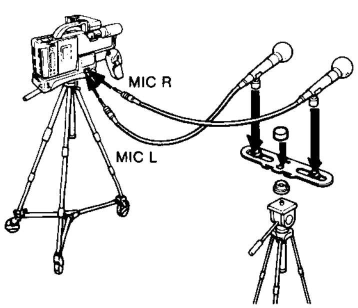
Note
The title can be recorded only during a camera recording. To insert a title while editing a tape, see "Insert Recording" on page 23.

When recording the title in fader or wiper mode
In fader mode, the title will appear and disappear with the picture fade-in and fade-out.
In wiper mode, the title remains displayed while the picture is wiped in and wiped out.

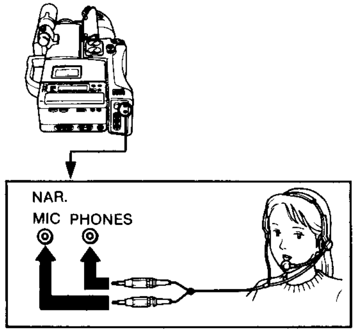
- The colour of the title characters may be blurred or shifted when the tape is played back.
- Check the combination of the colours of the title and the wiper on the monitor screen.

1-13. USE OF AN OPTIONAL MICROPHONE

R-1



R-2



The built-in microphone is a stereo uni-directional type. The sharp directivity of this microphone allows recording of the sound from the subject itself and its surroundings with natural sound quality.
By using an optional microphone, audio recording efficiency and enjoyment can be further increased.

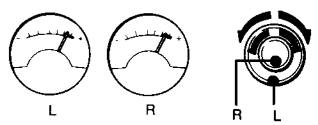
A variety of optional microphones
- Omni-directional microphone: To pick up sounds equally from all directions
- Uni-directional microphone: To pick up specific sounds
- Supercardioid microphone: To isolate a sound
- Zoom microphone: To allow the field of recording to be changed

To attach the optional microphones R-1
1 Attach the microphones to the microphone arm attached to the tripod with the microphone stand adaptor.
2 Connect the microphones to the MIC L/R jacks.
3 Turn on the CAMERA POWER switch (CAMERA mode) or the CAMERA POWER and VTR POWER switches (CAMERA-VTR mode).

To dub the narration with the external narration microphone, while monitoring the sounds to be recorded R-2
Use an optional stereo headphone equipped with the microphone, such as the Sony DR-200C.

Notes
- When the external narration microphone is connected to the NAR. MIC jack, the built-in NARRATION MIC does not function.
- Keep the external microphone far away from the TV so that the hum noise does not occur.
- When the external narration microphone is connected to the NAR. MIC jack, the sound from the connected microphone is recorded even if the PUSH TO NARRATE button is not pressed.

R-3



The sound to be recorded when the external microphone is connected

Track / Connection	PCM track		standard track
	L (left) channel	R (right) channel	
L and R	external L microphone	external R microphone	external L/R microphones
L	external L microphone	external L microphone	external L microphone
R	built-in L microphone	external R microphone	built-in L and external R microphones

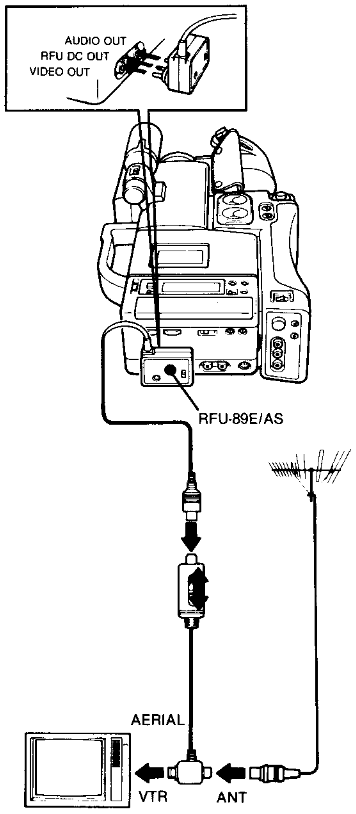
(in CAMERA mode or VTR-CAMERA mode)

To adjust the volume of the external microphone R-3
Normally set the green marks.
To adjust the volume, turn the REC LEVEL controls so that the meter does not enter into the red mark.

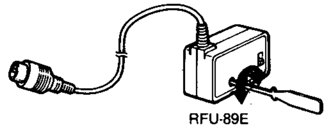
Notes
- If the meter swings into the red mark, the recorded sound is distorted.
- If the meter hardly swings at the left position, noisy sound is recorded.

1-14. PLAYBACK OF THE RECORDING TAPE

S-1



S-2



Connecting a TV

Connecting a TV without audio/video input connectors S-1

1 Connect the RFU-89E/AS RFU adaptor to the CCD-V200E.
2 Connect the aerial, CCD-V200E and TV to the aerial selector (supplied with the RFU-89E/AS). Use a 75-ohm coaxial cable for aerial connection.
3 RFU-89E only: Set the I/G selector according to the TV system of your country.
4 Adjust one of the TV programme positions to receive the signal from the video camera recorder. See "Adjusting the TV" below.
5 Set the selector switch on the aerial selector as follows:

For viewing a playback picture → VTR
For viewing TV programmes → ANT

6 Select the same channel on the TV as that selected in adjusting the TV.

Adjusting the TV with the RFU-89E

1 Turn on the TV and select a programme position which is not being used to receive a TV station.
2 Turn on the CAMERA POWER switch.
3 Set the selector switch of the aerial selector to VTR.
4 Tune the TV until you see the picture and hear the sound from the CCD-V200E.

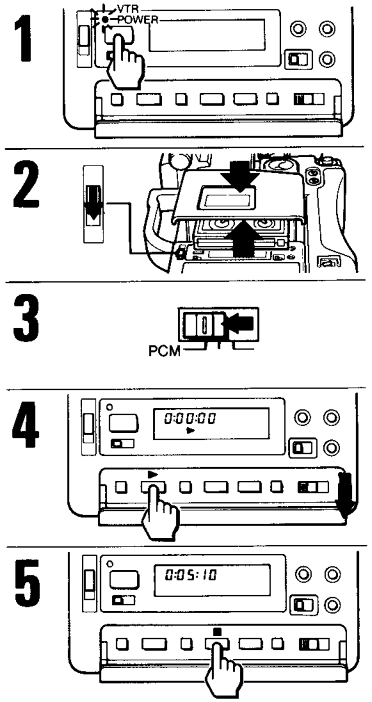
If the playback picture is not free of disturbance

1 Set the selector switch of the aerial selector to ANT.
2 Adjust the programme position of the TV to a channel between UHF channels 30 and 39 with the tuning control or the fine tuning control on the TV, so that the TV screen shows no picture and so that a steady rustling sound or no sound is heard.
3 Set the selector switch of the aerial selector to VTR.
4 Slowly turn the RF channel of the RFU-89E with the supplied screwdriver, until the picture from the CCD-V200E becomes clear. S-2
Now the TV adjustment is complete.

Adjusting the TV with the RFU-89AS

Select the CHANNEL selector on the RFU-89AS to 0 CH or 1 CH, whichever is not active in your area, and select the same channel on the TV.

S-4



To Play Back S-4

Turn on the TV or colour monitor and select the programme position for the video camera recorder or set the TV/VIDEO select button to VIDEO.

1 Press the VTR POWER switch.
2 Insert a cassette.
3 Set the AUDIO MONITOR switch to PCM.
4 Press the ▶ button. Playback begins.
5 To stop playback, press the ■ button.

When the tape comes to its end, the unit is automatically set to stop mode.

Setting the Audio Monitor Switch

Normally set to PCM.
When no sound is recorded on the PCM track, the sound on the standard track is played back automatically.

For monitoring the audio dubbed tape

To hear the audio dubbed sounds	Set to PCM.
To hear the audio dubbed sounds and prerecorded sounds	Set to MIX.
To hear the prerecorded sounds	Set to STD.

For monitoring the narration dubbed tape

To hear the sound of the original only	Set to PCM.
To hear the sound of the original and narration	Set to MIX.
To hear the narration only	Set to STD.

Notes
- If the PCM lamp does not light and/or the sound is not heard or heard only intermittently when a tape which has been recorded on a video camera recorder or a video cassette recorder without the PCM function is played back on this unit, set the AUDIO MONITOR switch on this unit to STD.
- When the stereo TV is connected only by the aerial cable, the stereo sounds cannot be heard.
- When the TV and this unit are connected with the RFU-89E/AS adaptor, sounds are heard as follows according to the position of the AUDIO MONITOR switch.

Position of the switch	Sounds heard
PCM	Mixed sounds recorded on the left and right channels of the PCM track
MIX	Mixed sounds recorded on the PCM track and the standard track
STD	Sounds recorded on the standard track

- To play back a tape recorded in the bilingual mode on this unit, decrease the sounds which you do not wish to monitor on the TV.

S-5

S-6

Various Playback Modes

To obtain a still picture
Press the ▮▮ button during playback. To resume normal playback, press the ▶ button.

When the pause mode lasts for more than approximately 7 minutes, the pause mode will be automatically released and the unit will be set in the stop mode.

Frame-by-frame playback
Press the ▮▮▶ button in still picture mode.
To resume normal playback, press the ▶ button.
If the ▮▮▶ button is kept depressed, a slow motion picture at 1/25 normal speed is obtained.

To view the picture at high speed
Keep pressing the ▶▶ (fast-forward) or ◀◀ (rewind) button during playback. Release the button for normal playback.

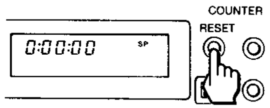
Notes
- Streaks will appear and the sound will be muted in the high-speed playback mode.
- When a tape is recorded in SP mode, a high-speed picture may be noisy with many streaks. Streaks will be wider than those of an LP-recorded tape.

Picture adjustment
S-5 When a double image picture appears in still mode, adjust the STILL ADJ control so that the center of the picture does not double.
S-6 When streaks appear in slow mode, adjust the FRAME ADJ control.

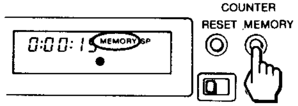
1-15. USE OF THE TAPE COUNTER

T

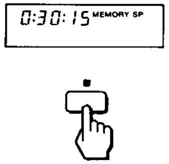
1



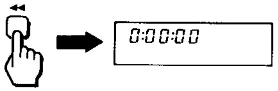
2



3



4



To Index the Whole Tape

Press the RESET button at the beginning of the tape so that the counter shows "0:00:00". By noting the counter reading at a particular point, you can easily find that point later by referring to the tape counter.

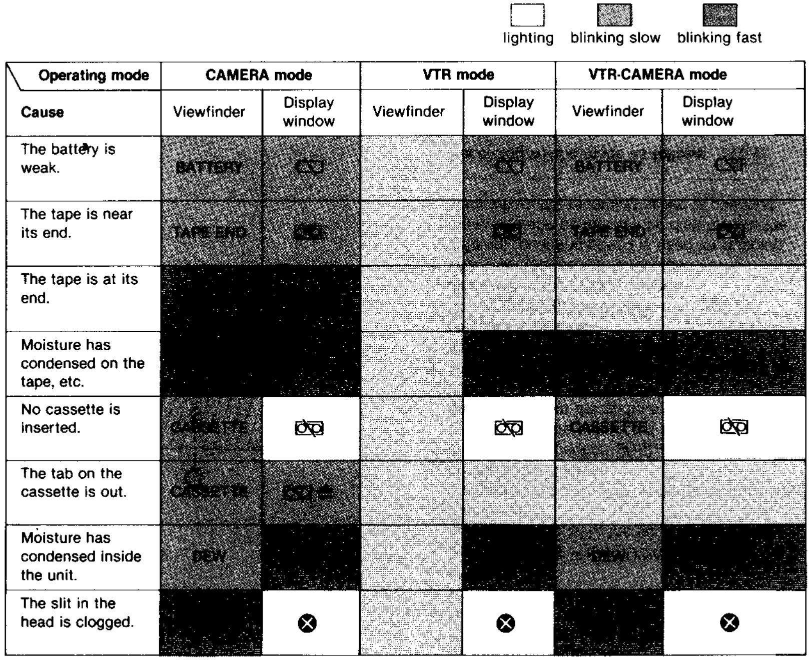
To Return to a Pre-registered Point T

1 During recording or playback, press the RESET button at the point you later want to locate.
2 Press the MEMORY button and the "MEMORY" indicator will appear in the display window.
3 Press the ■ button, when the recording or playback has finished.
4 Press the ◀◀ or ▶▶ button.
The tape will be rewound or sent forward and stop automatically when the counter reaches "0:00:00".

Notes

- While the "MEMORY" indicator is displayed, the counter cannot be reset to "0:00:00", therefore, press the MEMORY button to cancel the function.
- The counter reading and the point of the tape may not correspond exactly (5 digits max.)
There may be more time lag when playing back a tape with LP- and SP-recorded programmes mixed.
- The counter serves as a rough time counter. 1 digit represents approximately 1 second.
- The counter will not advance during any blank portion of a tape.

1-16. TROUBLE INDICATORS

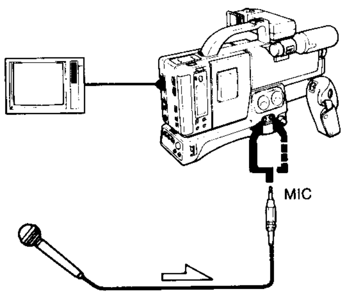


☐ lighting ▨ blinking slow ■ blinking fast

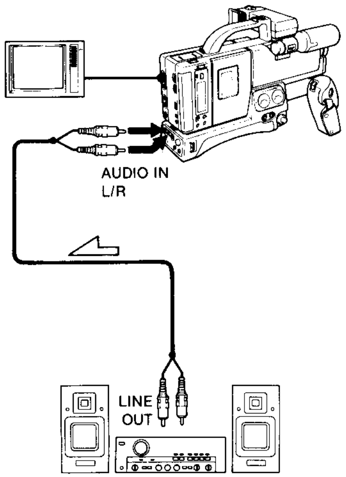
Operating mode	CAMERA mode		VTR mode		VTR-CAMERA mode	
Cause	Viewfinder	Display window	Viewfinder	Display window	Viewfinder	Display window
The battery is weak.	BATTERY	🔋		🔋	BATTERY	🔋
The tape is near its end.	TAPE END	▭		▭	TAPE END	▭
The tape is at its end.						
Moisture has condensed on the tape, etc.						
No cassette is inserted.	CASSETTE	⊘		⊘	CASSETTE	⊘
The tab on the cassette is out.	CASSETTE	▭				
Moisture has condensed inside the unit.	DEW				DEW	
The slit in the head is clogged.		⊗		⊗		⊗

1-17. TO DUB THE AUDIO SIGNALS

W-1



W-2



Any desired music or narration can additionally be recorded on the PCM track of a tape, while the picture and sound pre-recorded on the standard track are unchanged.

W-1 **To dub the signals from the microphone(s)**
W-2 **To dub the signals from the audio system**
W-3 **To dub the signals from the microphone and the audio system**

The sound to be recorded

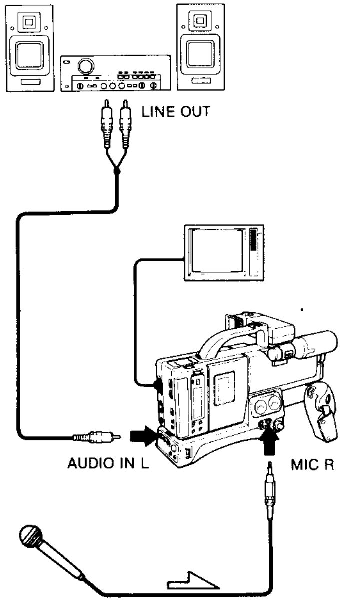
Track / Connection		PCM track	
		L (left) channel	R (right) channel
W-1	L and R	external L microphone	external R microphone
	L	external L microphone	external L microphone
	R	no recorded	external R microphone
W-2		stereo system L	stereo system R
W-3		stereo system	external microphone

(in VTR mode)

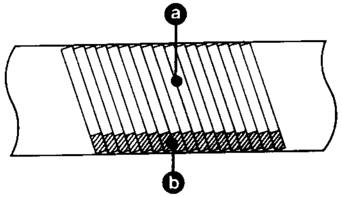
To dub the audio signals with the built-in stereo microphone
Disconnect the external microphone and set this unit in VTR-CAMERA mode. The sound from the built-in microphone is recorded on the left/right channels of the PCM track. (For details of the operation, see the next page.)

Note on the connection W-1
When the microphone is connected only to the MIC R jack, in VTR mode, noises are recorded and in VTR-CAMERA mode, the sound from the built-in left microphone is recorded on the left channel of the PCM track.

W-3



W-4



Operations

1 Turn on the TV and select the programme for the video camera recorder or select video input mode.
2 Turn on the VTR POWER on this unit.
To dub the sound with the build-in microphone, turn on the CAMERA POWER and then VTR POWER.
3 Press the ▶ button.
4 Decide where the audio dubbing is to start, and press the ❚❚ button.
5 Slide the AUDIO DUB. button.
6 Adjust the recording level with the REC LEVEL controls. (page 18.)
When the sound is dubbed with the built-in microphone, the recording level cannot be adjusted.
7 Press the ❚❚ button to release pause mode and at the same time start the audio source.

To stop dubbing for a moment, press the ❚❚ button.
To stop dubbing, press the ■ button.

To play back the audio dubbed tape, see pages 44 to 48.

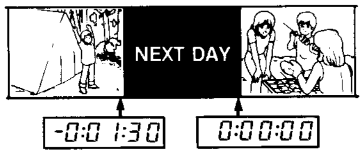
Notes
- At the starting of the dubbing, upper of the picture may be distorted.
The recorded picture will not be affected.
- During dubbing, black bands will appear in the screen. The recorded picture will not be affected.
- During dubbing, if the AUDIO MONITOR switch is set to STD, the sounds will not be monitored.
- The prerecorded sounds on the PCM track will be erased by dubbing.
- In case of connection W-2, if the microphones are connected to the MIC jacks, the signals from the audio system will not be dubbed.
- The dubbed sounds cannot be played back by the VTR without the PCM recording or playback functions.
- During dubbing, the INSERT mark will be displayed in the display window.
- When the tape which is recorded in the different recording speed is used for dubbing, the sound and picture will be disturbed at the point where the recording speed is changed.

Recording will be made as follows W-4

ⓐ **Standard track:** Sounds on this track remain.
ⓑ **PCM track:** The dubbed sounds are recorded on this track.

1-18. INSERT RECORDING

X-1



You can insert (record) video and audio simultaneously from the camera, a TV or a VTR onto any recorded tape. X-1

Preparation

Connect the necessary equipment and prepare a programme source to be inserted. For details, refer to the corresponding page.

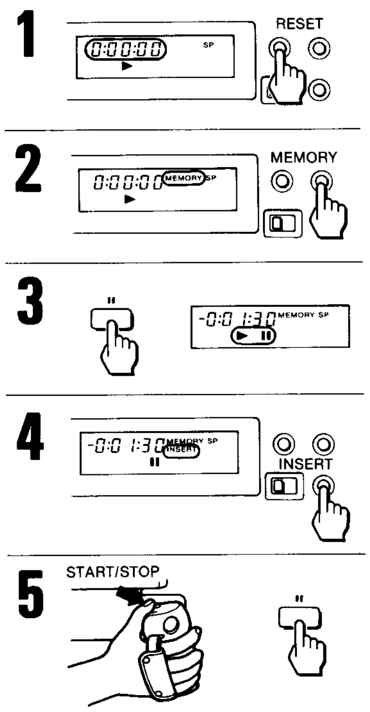
To insert camera recording
Slide the CAMERA POWER switch to the right and then press the VTR POWER switch (VTR-CAMERA mode).

To insert a TV programme
Press the VTR POWER switch.

To insert a recording from a VTR
Press the VTR POWER switch.

Select the same recording mode in which the original tape was recorded.

X-2



Operation X-2

Monitor the playback picture of the recorded tape on the viewfinder screen.

1 Find the position for the end of the insert and press the RESET button. The counter returns to "0:00:00".
2 Press the MEMORY button to register the counter "0:00:00" point. The "MEMORY" indicator appears in the display window.
3 Find the point where the insert should begin by pressing the ◀◀ button during playback and press the ❚❚ button.
4 Press the INSERT button. The unit is set to the insert pause mode.
The INSERT indicator will appear.
5 Start insert recording:
For camera recording, press the START/STOP button.
For other recording, press the ❚❚ button.

The insert recording will stop at the counter reading "0:00:00".

When the pause mode lasts for approximately 7 minutes, the pause mode will be automatically released and the unit will be set in the stop mode.

Note
When the inserted tape is played back, the picture may be distorted at the end of the inserted part.

You can start an insert recording without registering the end point.
In this case, start operating from step 3. Proceed with the remaining steps and stop the insertion by pressing the ■ button.

1-19. TROUBLE SHOOTING

If you think you have a problem, double-check before calling the serviceman.
You may have overlooked something relatively simple!

Symptom	Cause	Procedure
The START/STOP button does not operate.	The tape is affixed to the drum.	Remove the cassette with the ≜ switch.
	The tape is at its end.	Rewind the tape or use a new one.
	The recorder is set to the VTR mode.	Turn the CAMERA POWER on for VTR-CAMERA mode, or turn the VTR POWER off and turn the CAMERA POWER on for CAMERA mode.
	The tab on the cassette is out (red).	Use a new cassette or slide the tab.
The tape does not move by pressing a tape transport button.	The VTR POWER switch is turned off.	Press the VTR POWER switch.
	The tape is at its end.	Rewind the tape or use a new one.
Recording cannot be done even when the ● REC switch is slid to the right.	The tab on the cassette is out (red).	Use a new cassette or slide the tab in.
	The tape is at its end.	Rewind the tape or use a new one.
Camera recording cannot be done.	Plugs are connected to the ACCESSORY IN/OUT jacks.	Unplug them.
The power turns off.	While being operated in the CAMERA mode, the recorder has been in the pause mode for more than 7 minutes.	Turn on the power again.
	The battery is exhausted.	Use a charged battery.
A vertical band appears when a subject such as lights or a candle flame is shot against a dark background.	The contrast between the subject and background is too high; the camera is not malfunctioning.	
The battery pack is quickly discharged.	The ambient temperature is too low.	
	The battery pack has not been charged fully.	Charge the battery pack again.
The auto focusing function does not work.	The FOCUS switch is not set to AUTO	Set the FOCUS switch to AUTO.
	Shooting conditions are not suitable for auto focusing operation.	Set the FOCUS switch to MAN and focus manually.
The linear auto white balance function does not work.	The white balance sensor is covered.	Remove the obstacle.
	Shooting conditions are not suitable for the linear auto white balance operation. (See page 13.)	Set the WHITE BAL selector to ☀ or 💡.
The cassette cannot be removed from the compartment.	The battery is exhausted.	Use the charged battery.

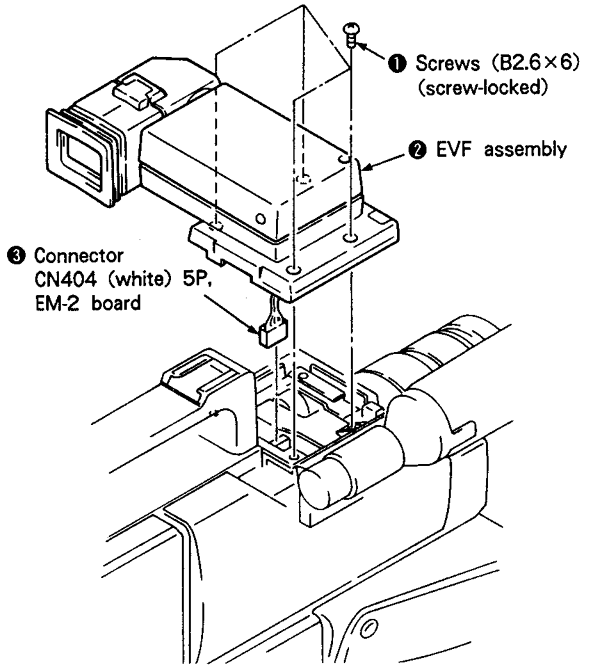
Symptom	Cause	Procedure
Stereo recording is played back in monaural.	The AUDIO MONITOR switch is not set to PCM.	Set the AUDIO MONITOR switch to PCM.
When the external microphone is connected, recording can not be performed.	The REC LEVEL controls are set to 0.	Set the REC LEVEL controls to the appropriate positions.
When the external microphone is connected, the recorded sound is distorted, or noisy sound is recorded.	Setting of the REC LEVEL controls are too high or low.	Set the REC LEVEL controls to the appropriate positions.
The image on the viewfinder screen is not clear.	The viewfinder lens is not adjusted.	Adjust the viewfinder lens. (See page 9.)
The playback picture is not clear.	The EDIT switch is set to the "EDIT" position.	Set the EDIT switch to the left position.
	The programme position for the video camera recorder is not adjusted correctly on the TV.	Adjust the TV. (See page 19.)
The picture is noisy.	The video heads may be contaminated.	Clean the heads using a cleaning cassette.

If the trouble is not among the above list, look at the indicators and check the symptoms.

SECTION 2
DISASSEMBLY

2-1. REMOVAL OF EVF (ELECTRONIC VIEW FINDER) ASSEMBLY

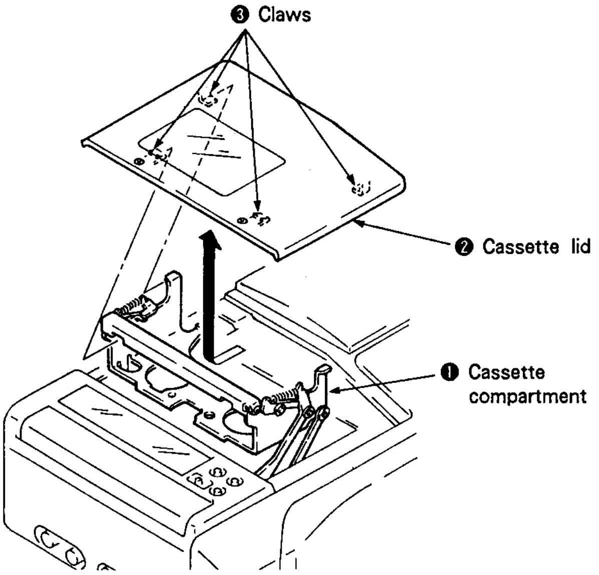
1) Remove the four screws ❶ and remove the EVF assembly ❷.
2) Disconnect the connector CN404 ❸.


❶ Screws (B2.6×6) (screw-locked)
❷ EVF assembly
❸ Connector CN404 (white) 5P, EM-2 board

2-2. REMOVAL OF CASSETTE LID

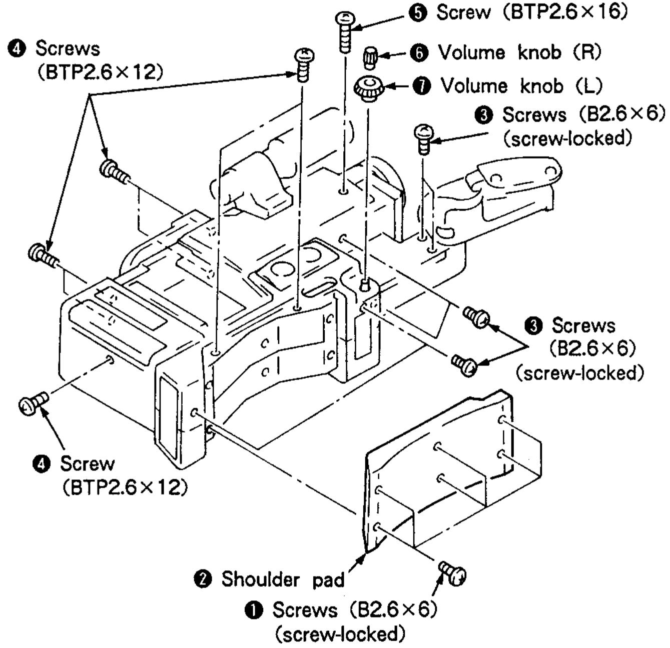
1) Turn ON the power, and open the cassette compartment ❶ by operating the eject switch.
2) Remove the cassette lid ❷ by sliding it in the direction of the arrow.

Note : When attaching the cassette lid ❷, make sure to mount the four claws ❸ onto the specified positions.

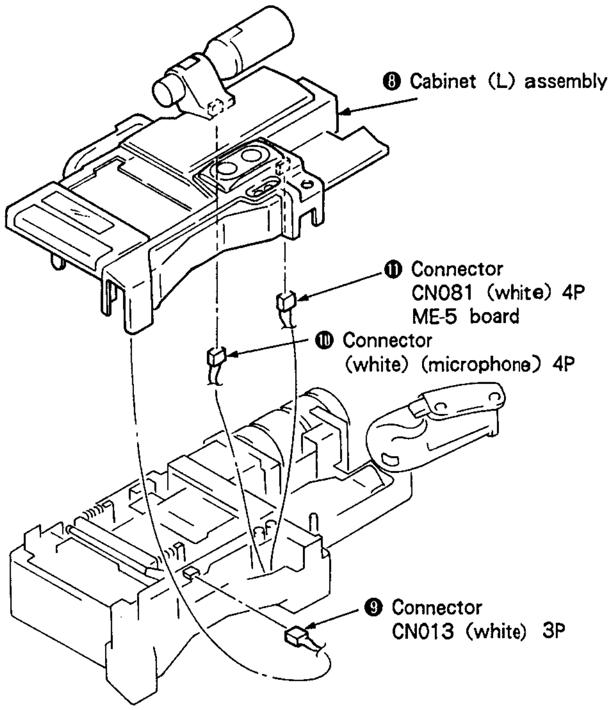

❸ Claws
❷ Cassette lid
❶ Cassette compartment

2-3. REMOVAL OF CABINET (L) ASSEMBLY

1) Remove the six screws ❶, and remove the shoulder pad ❷.
2) Remove the six screws ❸, seven screws ❹, and screw ❺.
3) Remove volume knob (R) ❻ and volume knob (L) ❼.

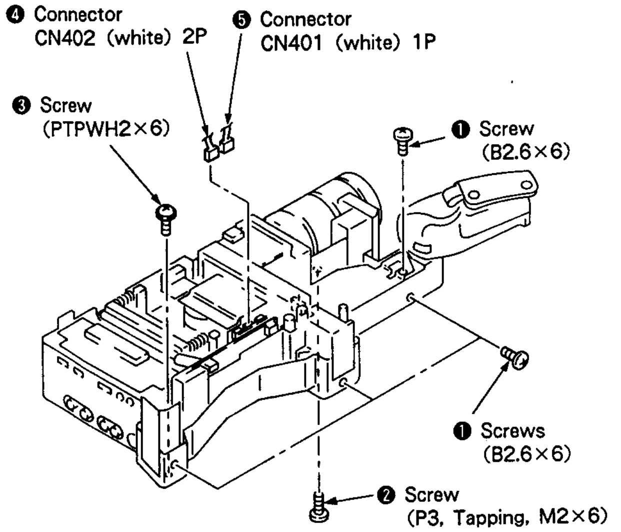

❺ Screw (BTP2.6×16)
❹ Screws (BTP2.6×12)
❻ Volume knob (R)
❼ Volume knob (L)
❸ Screws (B2.6×6) (screw-locked)
❸ Screws (B2.6×6) (screw-locked)
❹ Screw (BTP2.6×12)
❷ Shoulder pad
❶ Screws (B2.6×6) (screw-locked)

4) Remove the cabinet (L) assembly ❽.
5) Disconnect the connector CN013 ❾, connector (microphone) ❿, and connector CN081 ⓫.

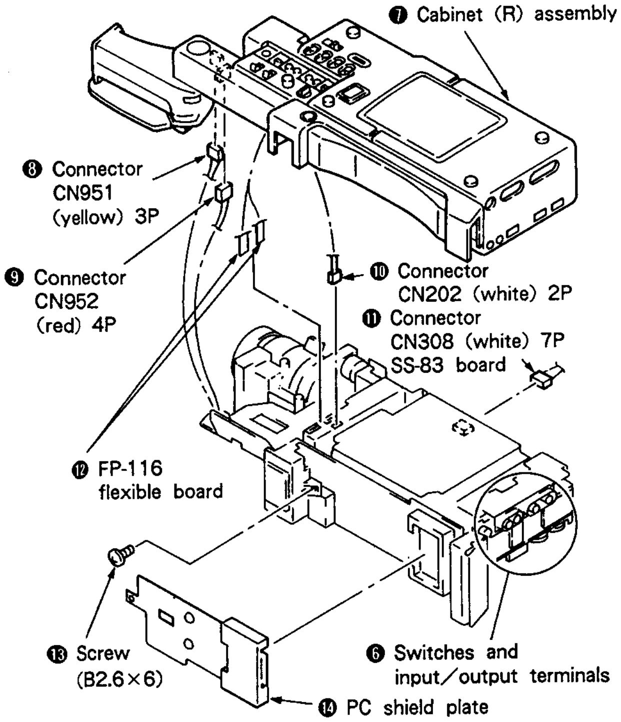

❽ Cabinet (L) assembly
⓫ Connector CN081 (white) 4P ME-5 board
❿ Connector (white) (microphone) 4P
❾ Connector CN013 (white) 3P

2-4. REMOVAL OF CABINET (R) ASSEMBLY

1) Remove the four screws ❶, screw ❷, and screw ❸.
2) Disconnect connector CN402 ❹ and connector CN401 ❺.

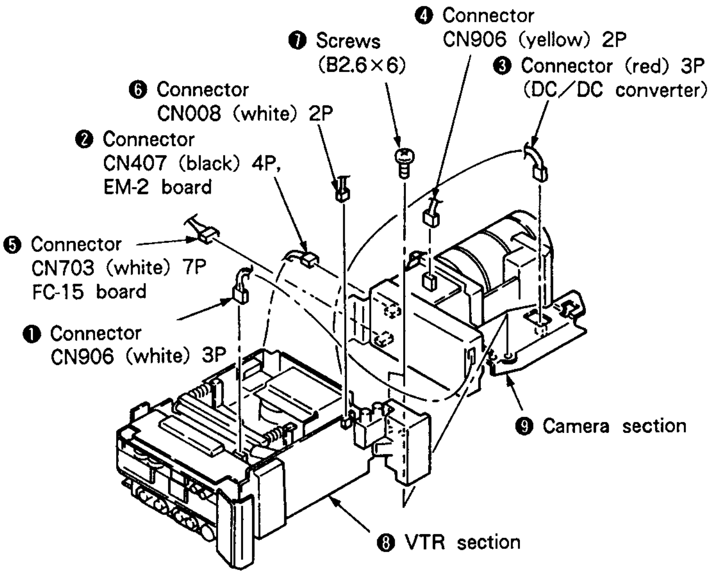

❹ Connector
CN402 (white) 2P
❺ Connector
CN401 (white) 1P
❸ Screw
(PTPWH2×6)
❶ Screw
(B2.6×6)
❶ Screws
(B2.6×6)
❷ Screw
(P3, Tapping, M2×6)

3) Turn the set upside down.
4) Remove the cabinet (R) assembly ❼. Be careful not to damage the switches and input/output terminals ❻.
5) Disconnect connectors CN951 ❽, CN952 ❾, CN202 ❿ and CN308⓫.
6) Remove the FP-116 flexible board ⓬.
7) Remove the screw ⓭, and remove the PC shield plate ⓮.


❼ Cabinet (R) assembly
❽ Connector
CN951
(yellow) 3P
❾ Connector
CN952
(red) 4P
❿ Connector
CN202 (white) 2P
⓫ Connector
CN308 (white) 7P
SS-83 board
⓬ FP-116
flexible board
⓭ Screw
(B2.6×6)
❻ Switches and
input/output terminals
⓮ PC shield plate

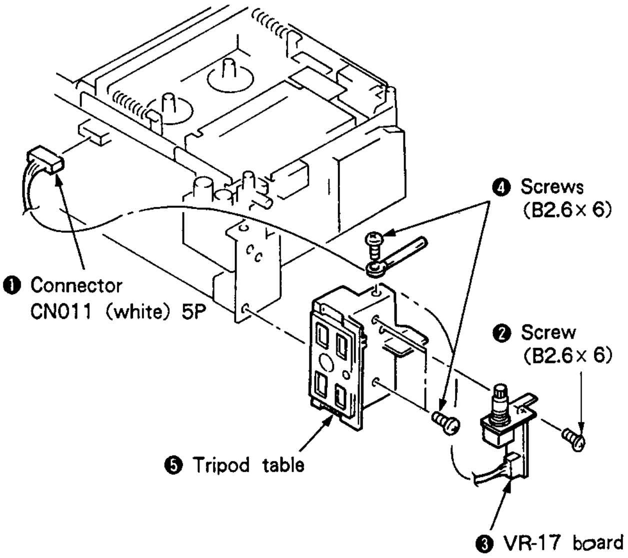
2-5. SEPARATION OF VTR SECTION AND CAMERA SECTION

1) Disconnect the connectors CN906 ❶, CN407 ❷, (DC-DC converter) ❸, CN906 ❹, CN703 ❺ and CN008 ❻.
2) Remove the two screws ❼, and separate the VTR section ❽ and the camera section ❾.


❹ Connector
CN906 (yellow) 2P
❼ Screws
(B2.6×6)
❸ Connector (red) 3P
(DC/DC converter)
❻ Connector
CN008 (white) 2P
❷ Connector
CN407 (black) 4P,
EM-2 board
❺ Connector
CN703 (white) 7P
FC-15 board
❶ Connector
CN906 (white) 3P
❾ Camera section
❽ VTR section

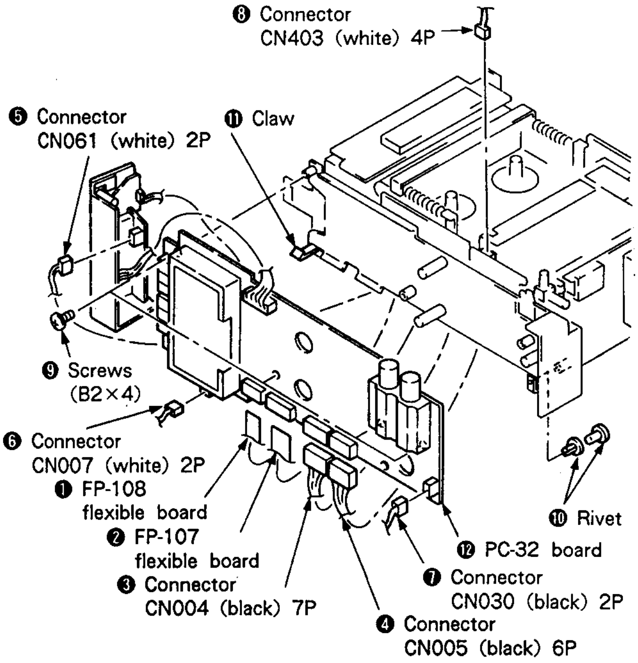
2-6. REMOVAL OF THE VR-17 BOARD (TRIPOD TABLE)

1) Disconnect the connector CN011 ❶.
2) Remove the screw ❷ and remove the VR-17 board ❸.
3) Remove the three screws ❹ and remove the tripod table ❺.


❹ Screws
(B2.6× 6)
❶ Connector
CN011 (white) 5P
❷ Screw
(B2.6× 6)
❺ Tripod table
❸ VR-17 board

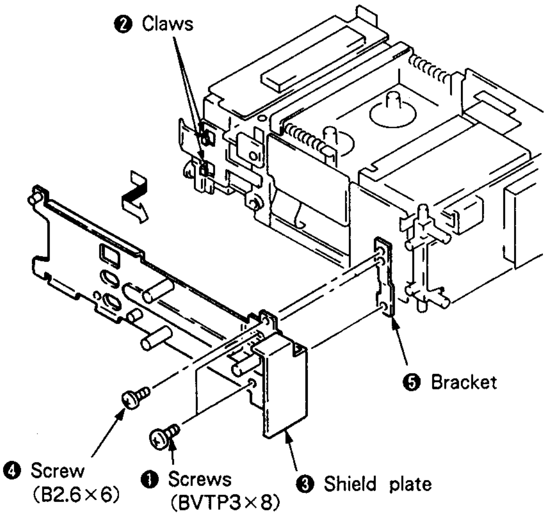
2-7. REMOVAL OF THE PC-32 BOARD

1) Remove the FP-108 flexible board ❶ and FP-107 flexible board ❷.
2) Disconnect the connectors CN004 ❸, CN005 ❹, CN061 ❺, CN007 ❻, CN030 ❼ and CN403 ❽.
3) Remove the four screws ❾ and remove the rivet ❿.
4) Remove the claw ⓫ and remove the PC-32 board ⓬.


❽ Connector
CN403 (white) 4P
❺ Connector
CN061 (white) 2P
⓫ Claw
❾ Screws
(B2×4)
❻ Connector
CN007 (white) 2P
❶ FP-108
flexible board
❷ FP-107
flexible board
❸ Connector
CN004 (black) 7P
❿ Rivet
⓬ PC-32 board
❼ Connector
CN030 (black) 2P
❹ Connector
CN005 (black) 6P

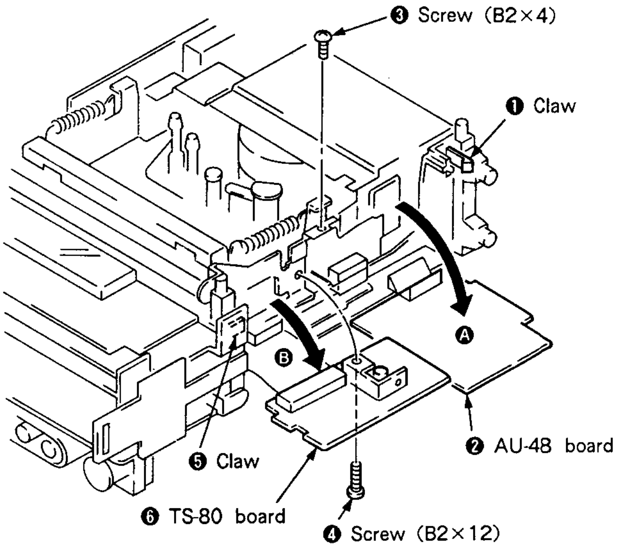
2-8. REMOVAL OF THE SHIELD PLATE

1) Remove the two screws ❶.
2) Remove the shield plate ❸ by pulling it off the two claws ❷ in the direction of the arrow.
3) Remove the screw ❹ and remove the bracket ❺.


❷ Claws
❺ Bracket
❹ Screw
(B2.6×6)
❶ Screws
(BVTP3×8)
❸ Shield plate

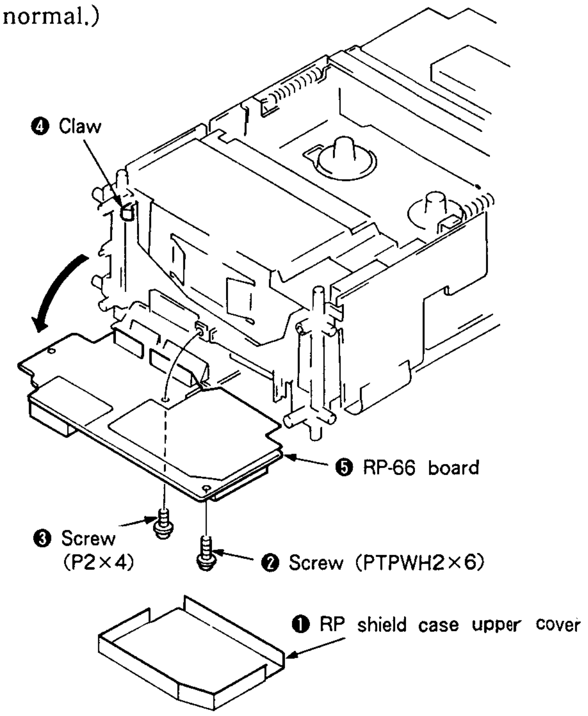
2-9. OPENING OF THE AU-48 BOARD AND THE TS-80 BOARD

1) Open the AU-48 board ❷ in the direction of arrow Ⓐ by releasing it from the claw ❶. (There is a loud sound when opening. This is normal.)
2) Remove screw ❸ and screw ❹.
3) Open the TS-80 board ❻ in the direction of arrow Ⓑ by releasing it from the claw ❺.


❸ Screw (B2×4)
❶ Claw
Ⓑ
Ⓐ
❷ AU-48 board
❺ Claw
❻ TS-80 board
❹ Screw (B2×12)

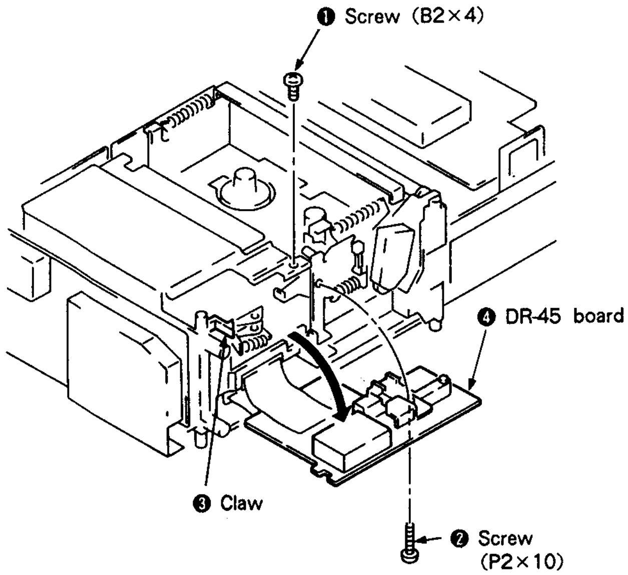
2-10. OPENING OF THE RP-66 BOARD

1) Remove the RP shield case upper cover ❶.
2) Remove screw ❷ and screw ❸.
3) Open the RP-66 board ❺ in the direction of the arrow by releasing it from the claw ❹. (There is a loud sound when opening. This is normal.)


❹ Claw
❺ RP-66 board
❸ Screw
(P2×4)
❷ Screw (PTPWH2×6)
❶ RP shield case upper cover

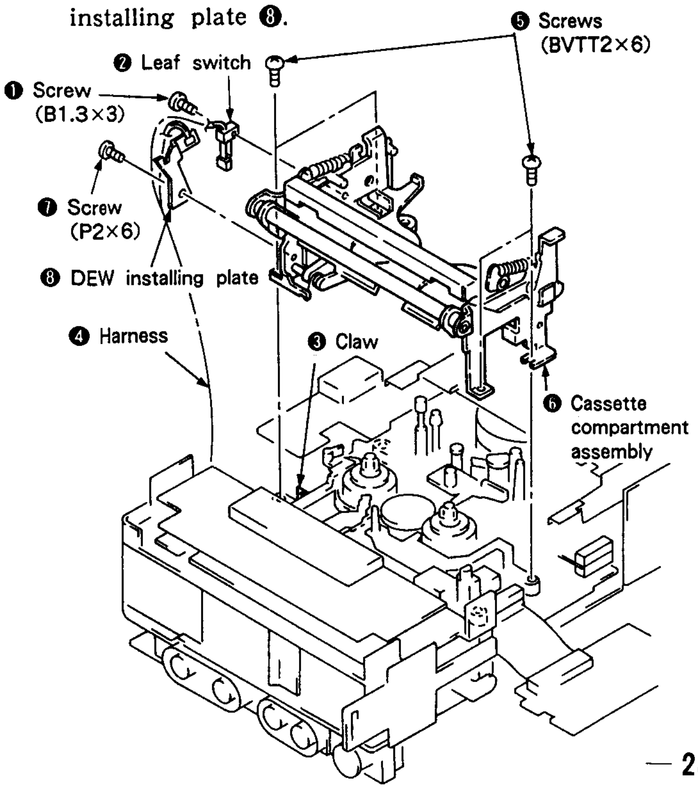
2-11. OPENING OF THE DR-45 BOARD

1) Remove screw ❶ and screw ❷.
2) Open the DR-45 board ❹ in the direction of the arrow by releasing it from the claw ❸.


❶ Screw (B2×4)
❹ DR-45 board
❸ Claw
❷ Screw (P2×10)

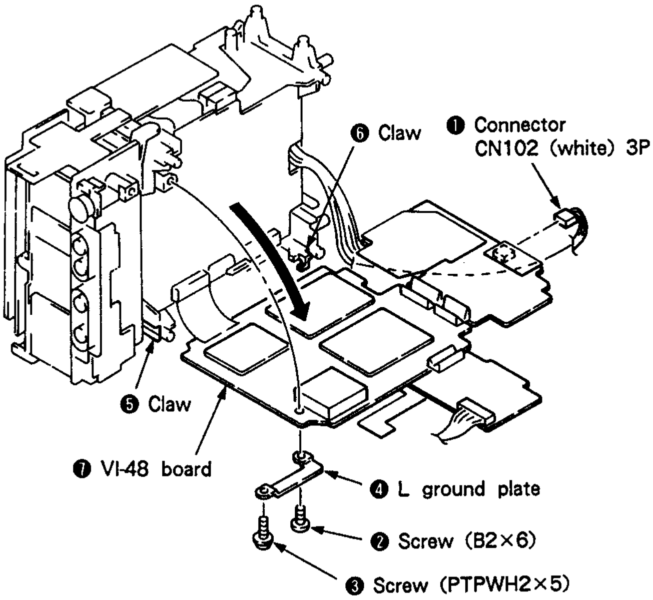
2-12. REMOVAL OF THE CASSETTE COMPARTMENT ASSEMBLY

1) Open the TS-80 board by referring to 2-9.
2) Open the DR-45 board by referring to 2-11.
3) Remove the screw ❶ and remove the leaf switch ❷.
4) Remove the harness ❹ from the claw ❸.
5) Remove the four screws ❺ and remove the cassette compartment assembly ❻.
6) Remove the screw ❼ and remove the DEW installing plate ❽.


❺ Screws (BVTT2×6)
❷ Leaf switch
❶ Screw (B1.3×3)
❼ Screw (P2×6)
❽ DEW installing plate
❹ Harness
❸ Claw
❻ Cassette compartment assembly

2-13. OPENING OF THE VI-48 BOARD

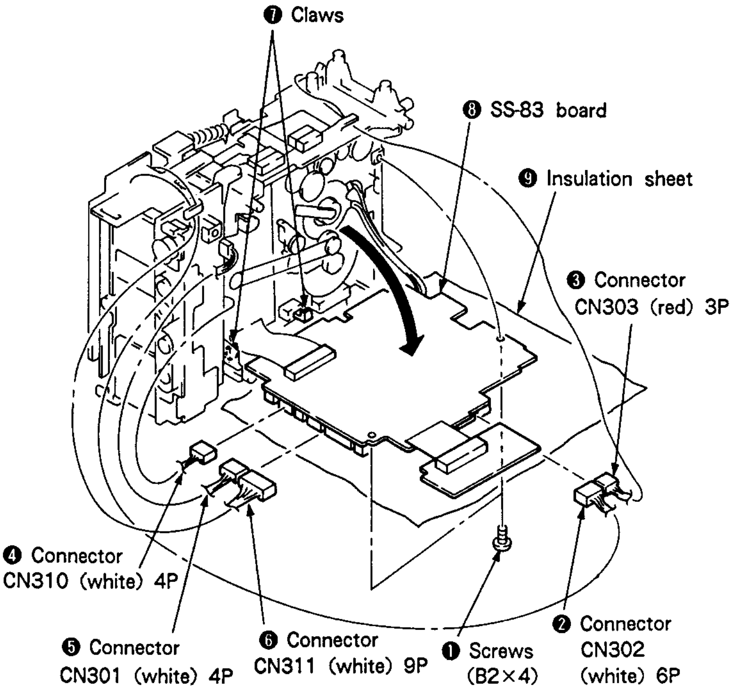
1) Open the AU-48 board by referring to 2-9.
2) Open the RP-66 board by referring to 2-10.
3) Disconnect the connector CN102 ❶.
4) Remove screw ❷ and screw ❸, and remove the L ground plate ❹.
5) Unhook the claw ❺ and open the VI-48 board ❼ in the direction of the arrow while releasing it from the other claw ❻.


❻ Claw
❶ Connector CN102 (white) 3P
❺ Claw
❼ VI-48 board
❹ L ground plate
❷ Screw (B2×6)
❸ Screw (PTPWH2×5)

2-14. OPENING OF THE SS-83 BOARD

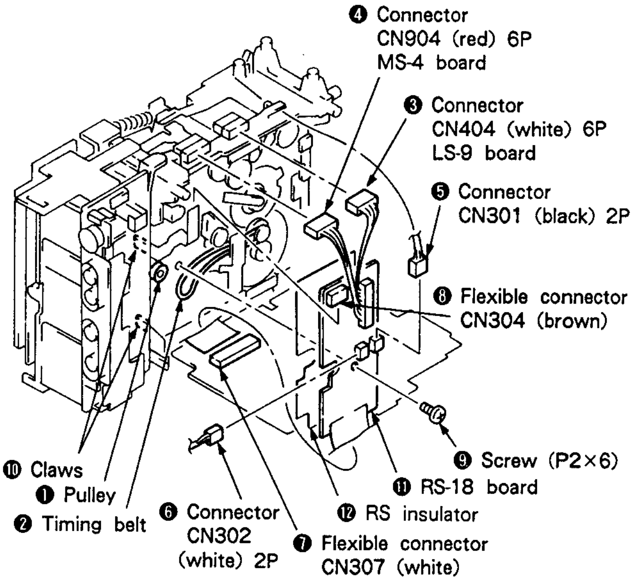
1) Open the VI-48 board by referring to 2-13.
2) Open the TS-80 board by referring to 2-9.
3) Remove the two screws ❶.
4) Disconnect the connectors CN302 ❷, CN301 ❸, CN310 ❹, CN301 ❺ and CN311 ❻.
5) Unhook two claws ❼, and open the SS-83 board ❽ in the direction of the arrow.

Note : When opening the SS-83 board ❽, insert an insulation sheet ❾ between the VI-48 and the SS-83 boards.


❼ Claws
❽ SS-83 board
❾ Insulation sheet
❸ Connector CN303 (red) 3P
❹ Connector CN310 (white) 4P
❺ Connector CN301 (white) 4P
❻ Connector CN311 (white) 9P
❶ Screws (B2×4)
❷ Connector CN302 (white) 6P

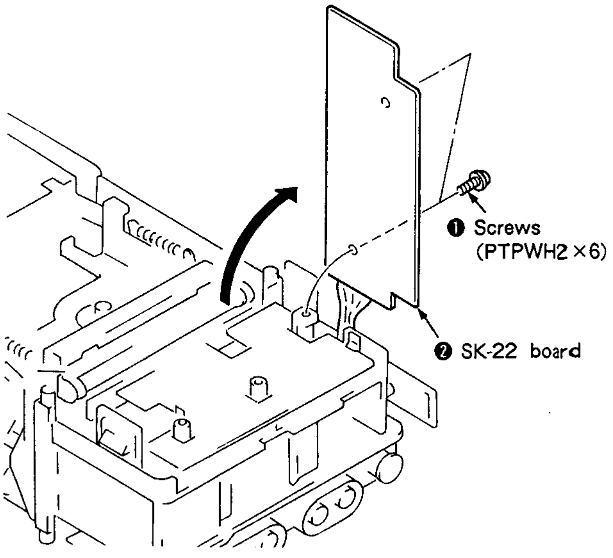
2-15. REMOVAL OF THE RS-18 BOARD

1) Open the SS-83 board by referring to 2-14.
2) Remove the timing belt ❷ from the pulley ❶.
3) Disconnect the connectors (LS-9 board) ❸, (MS-4 board) ❹, CN301 ❺, CN302 ❻, and the flexible connectors CN307 ❼ and CN304 ❽.
4) Remove the screw ❾.
5) Remove the RS-18 board ⓫ while releasing two claws ❿.
6) Remove the RS insulator ⓬.


❹ Connector CN904 (red) 6P MS-4 board
❸ Connector CN404 (white) 6P LS-9 board
❺ Connector CN301 (black) 2P
❽ Flexible connector CN304 (brown)
❾ Screw (P2×6)
⓫ RS-18 board
⓬ RS insulator
❼ Flexible connector CN307 (white)
❻ Connector CN302 (white) 2P
❿ Claws
❶ Pulley
❷ Timing belt

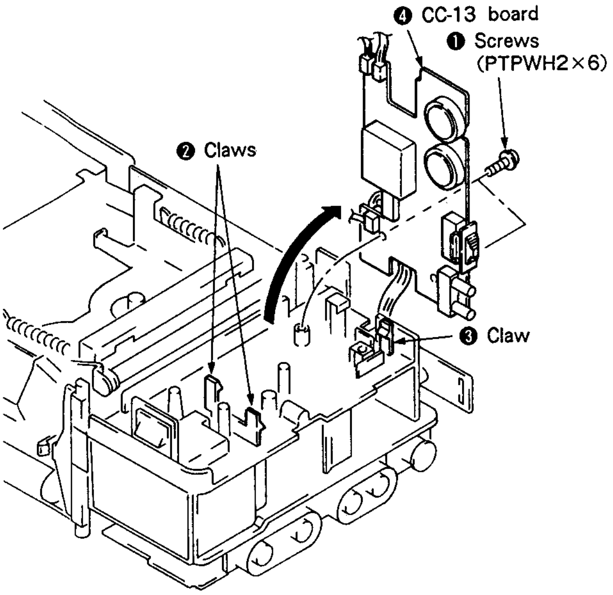
2-16. OPENING OF THE SK-22 BOARD

1) Remove the two screws ❶ and open the SK-22 board ❷ in the direction of the arrow.


❶ Screws (PTPWH2×6)
❷ SK-22 board

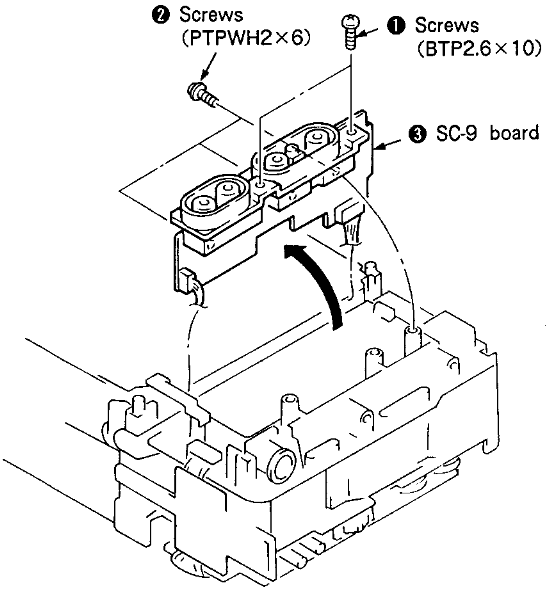
2-17. OPENING OF THE CC-13 BOARD

1) Open the SK-22 board by referring to 2-16.
2) Remove the two screws ❶.
3) Release two claws ❷, and open the CC-13 board ❹ in the direction of the arrow while releasing the last claw ❸.


❹ CC-13 board
❶ Screws
(PTPWH2×6)
❷ Claws
❸ Claw

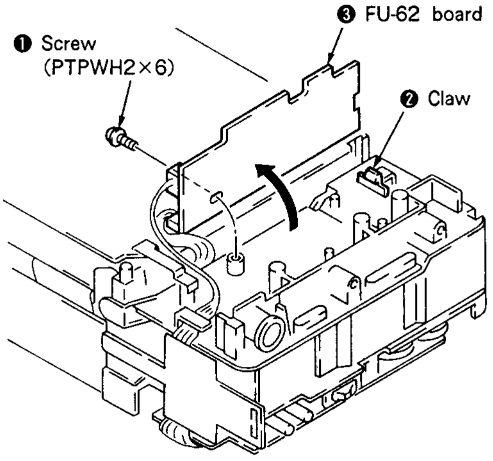
2-18. OPENING OF THE SC-9 BOARD

1) Remove the two screws ❶ and the three screws ❷.
2) Open the SC-9 board ❸ in the direction of the arrow.


❷ Screws
(PTPWH2×6)
❶ Screws
(BTP2.6×10)
❸ SC-9 board

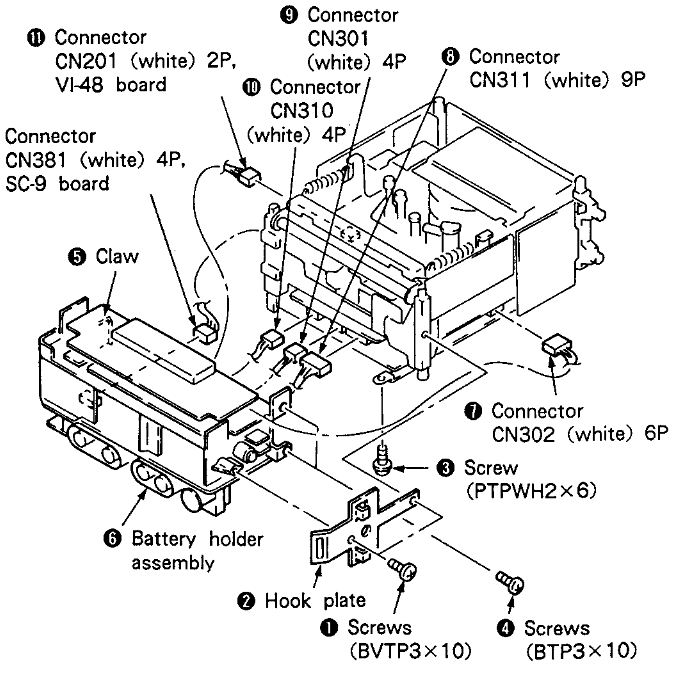
2-19. OPENING OF THE FU-62 BOARD

1) Open the SC-9 board by referring to 2-18.
2) Remove the screw ❶.
3) Release the claw ❷, and open the FU-62 board ❸ in the direction of the arrow.


❸ FU-62 board
❶ Screw
(PTPWH2×6)
❷ Claw

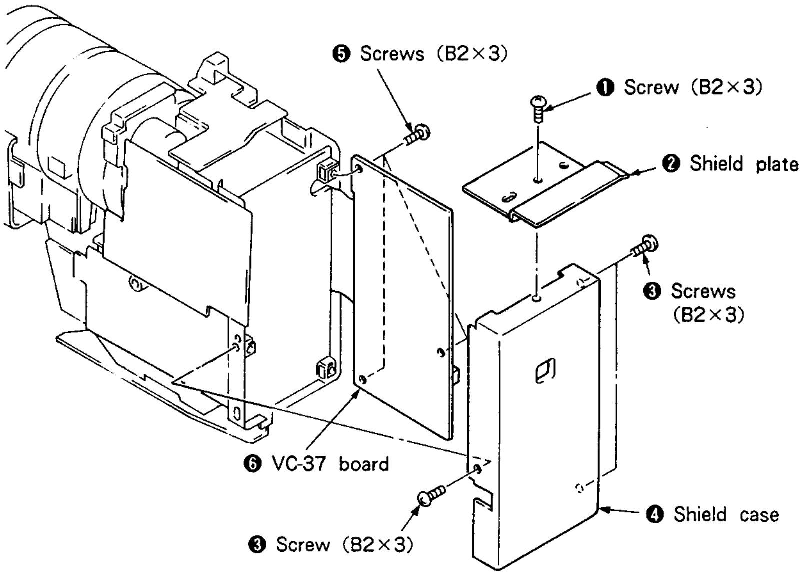
2-20. REMOVAL OF THE BATTERY HOLDER ASSEMBLY

1) Remove the two screws ❶ and remove the hook plate ❷.
2) Remove the screw ❸ and the two screws ❹.
3) Remove the battery holder assembly ❻ while releasing it from the claw ❺.
4) Disconnect the connectors CN302 ❼, CN311 ❽, CN301 ❾, CN310 ❿, CN201 ⓫ and CN381 ⓬.


❾ Connector
CN301
(white) 4P
⓫ Connector
CN201 (white) 2P,
VI-48 board
❽ Connector
CN311 (white) 9P
❿ Connector
CN310
(white) 4P
⓬ Connector
CN381 (white) 4P,
SC-9 board
❺ Claw
❼ Connector
CN302 (white) 6P
❸ Screw
(PTPWH2×6)
❻ Battery holder
assembly
❷ Hook plate
❶ Screws
(BVTP3×10)
❹ Screws
(BTP3×10)

2-21. OPENING OF THE VC-37 BOARD

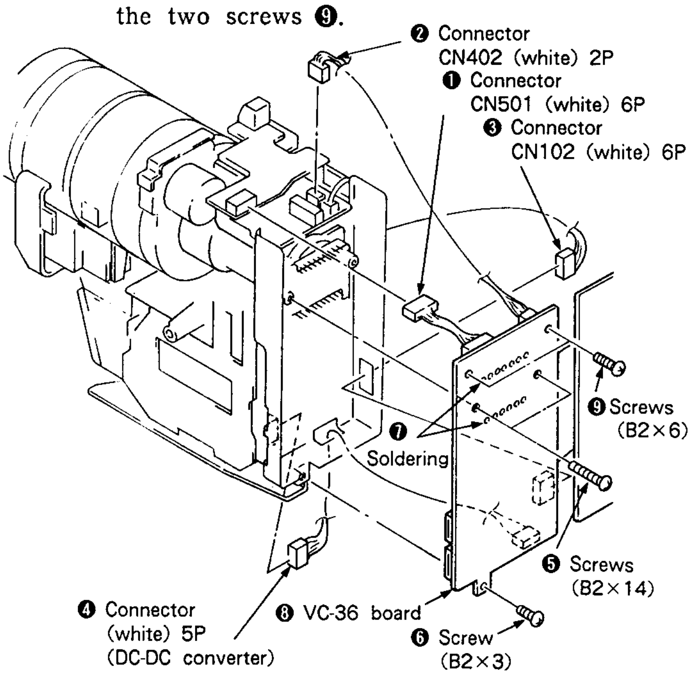
1) Remove the screw ❶ and remove the shield plate ❷.
2) Remove the three screws ❸ and remove the shield case ❹.
3) Remove the three screws ❺ and open the VC-37 board ❻.


❺ Screws (B2×3)
❶ Screw (B2×3)
❷ Shield plate
❸ Screws (B2×3)
❻ VC-37 board
❹ Shield case
❸ Screw (B2×3)

2-22. REMOVAL OF THE VC-36 BOARD

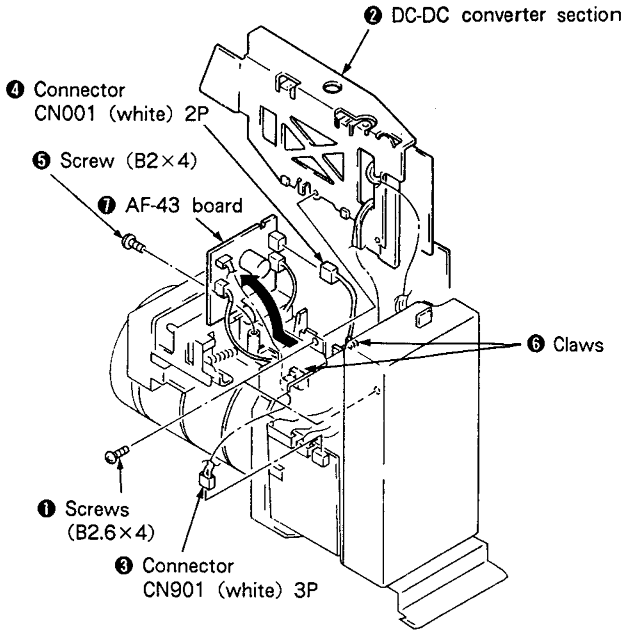
1) Open the VC-37 board by referring to 2-21.
2) Disconnect the connectors CN501 ❶, CN402 ❷, CN102 ❸, (DC-DC converter) ❹.
3) Remove the two screws ❺ and the screw ❻.
4) Unsolder at twenty places (CCD imager) ❼, and remove the VC-36 board ❽.

Note : When the CCD imager is not removed, the VC-37 board can be removed by unscrewing the two screws ❾.


❷ Connector CN402 (white) 2P
❶ Connector CN501 (white) 6P
❸ Connector CN102 (white) 6P
❾ Screws (B2×6)
❼ Soldering
❺ Screws (B2×14)
❹ Connector (white) 5P (DC-DC converter)
❽ VC-36 board
❻ Screw (B2×3)

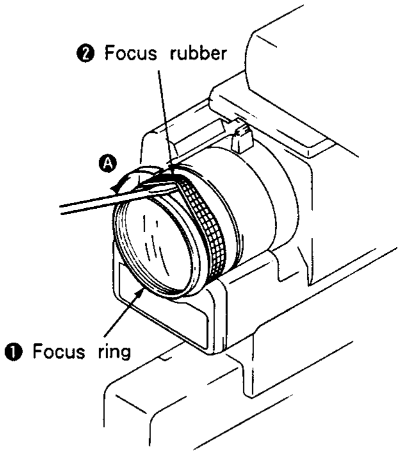
2-23. OPENING OF THE AF-43 BOARD

1) Remove the two screws ❶ and remove the DC-DC converter section ❷.
2) Disconnect the connectors CN901 ❸ and CN001 ❹.
3) Remove the screw ❺.
4) Open the AF-43 board ❼ in the direction of the arrow while releasing it from the two claws ❻.

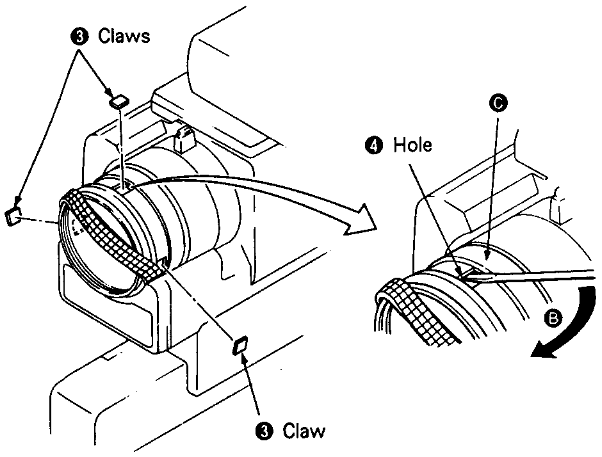

❷ DC-DC converter section
❹ Connector CN001 (white) 2P
❺ Screw (B2×4)
❼ AF-43 board
❻ Claws
❶ Screws (B2.6×4)
❸ Connector CN901 (white) 3P

2-24. REMOVAL OF THE FOCUS RING

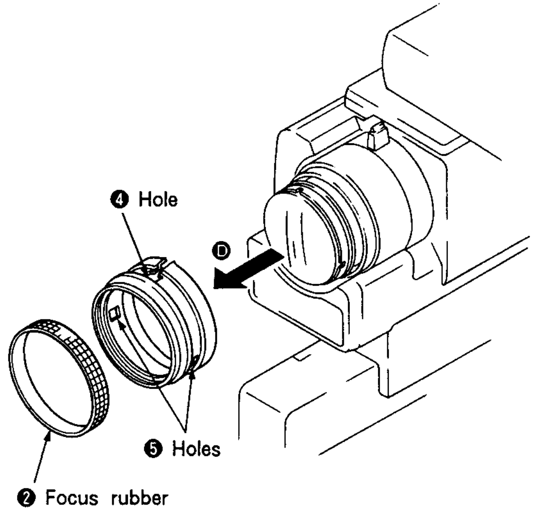
1) Turn the focus ring ❶ fully in the direction of arrow 🅐.
2) Lift off the focus rubber ❷ in the groove of the focus ring ❶ using a sloted screwdriver etc.



3) Take out the three claws ❸.
4) Insert a sloted screwdriver etc. into one of the hole ❹ in the focus ring groove and turn in the direction of arrow 🅑 to make a cut in section 🅒 of the focus ring.

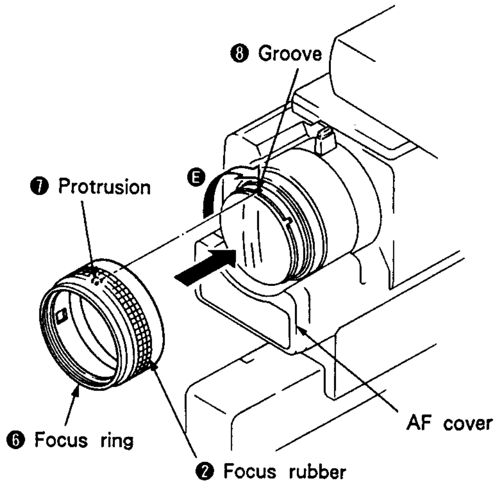


5) Insert a sloted screwdriver etc. into hole ❹ and holes ❺ (2 places) as shown in step 4), and force off the focus ring ❶ which is fixed to the zoom lens with adhesive to remove it in the direction of arrow 🅓.
   Note : Be carefully not to scratch the lens.

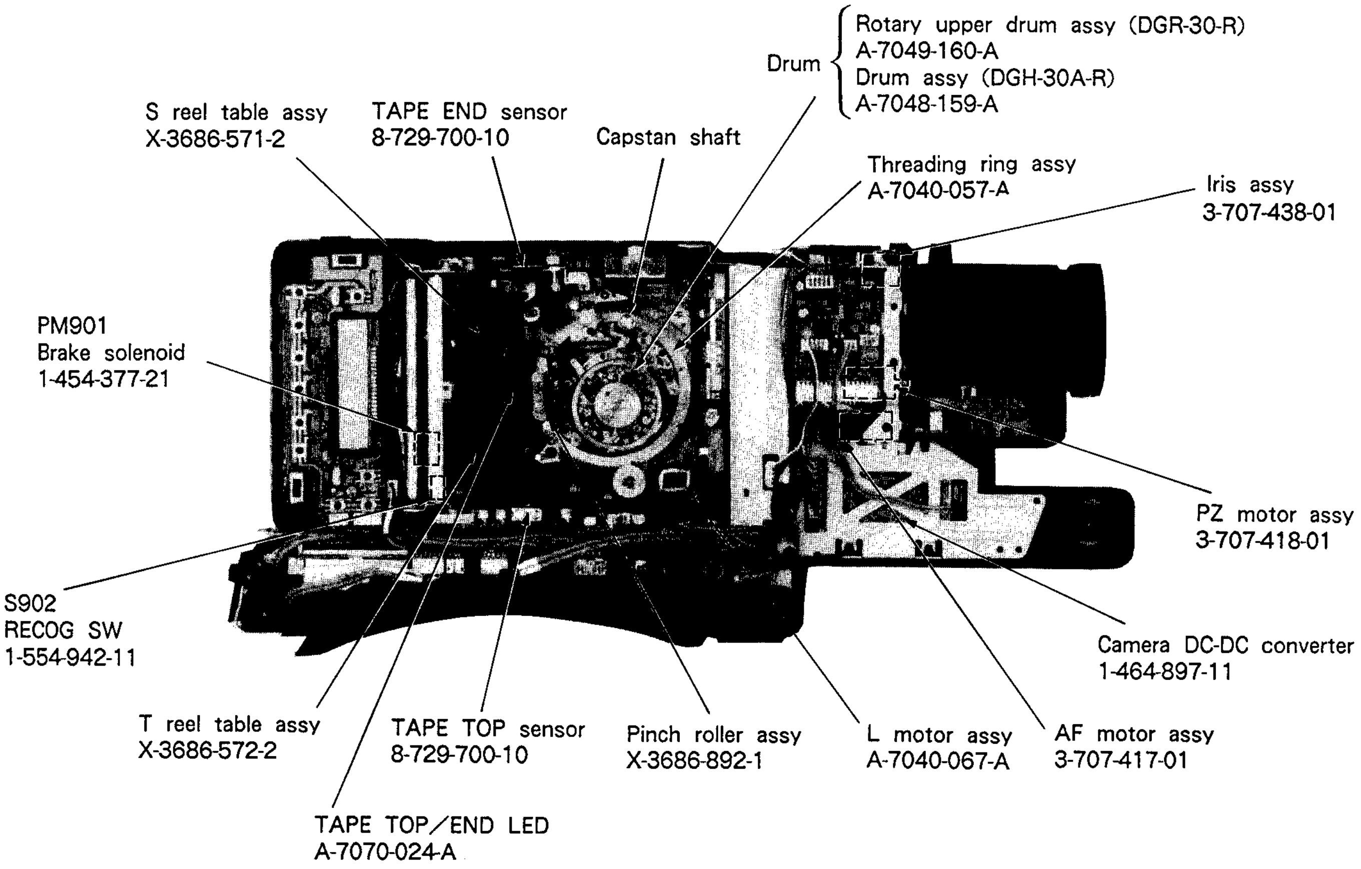


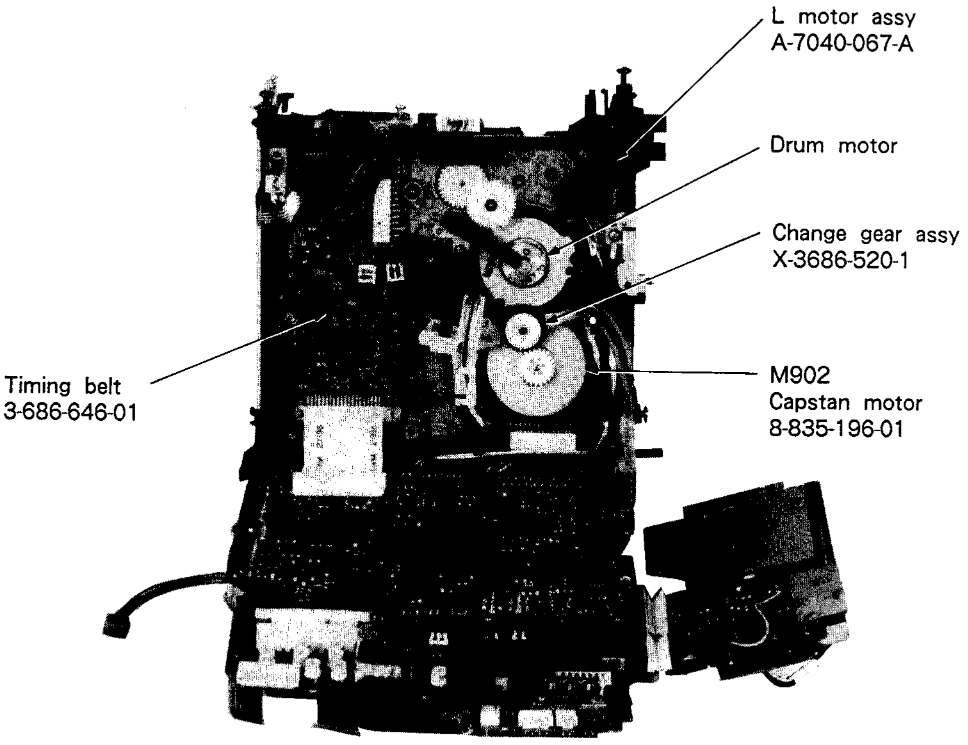
2-25. Attachment of Focus Ring

1) Attach the focus rubber ❷ to a new focus ring ❻.
2) Rotate the end of the zoom lens fully in the direction of arrow 🅔.
3) Mount the focus ring ❻ by aligning the protrusions ❼ in the focus ring with the grooves ❽ at the end of the zoom lens.
4) Lift off the focus rubber ❷ in the groove of the focus ring as described in steps 1) and 2) under "Removal".
5) Apply a small amount of adhesive in the spaces between the claws and the holes in the focus ring ❻ (3 places).
6) After the adhesive has bonded, reinsert the focus rubber into the groove of the focus ring ❻.
   Note : When the AF cover is removed, the focus rubber can be attached last.



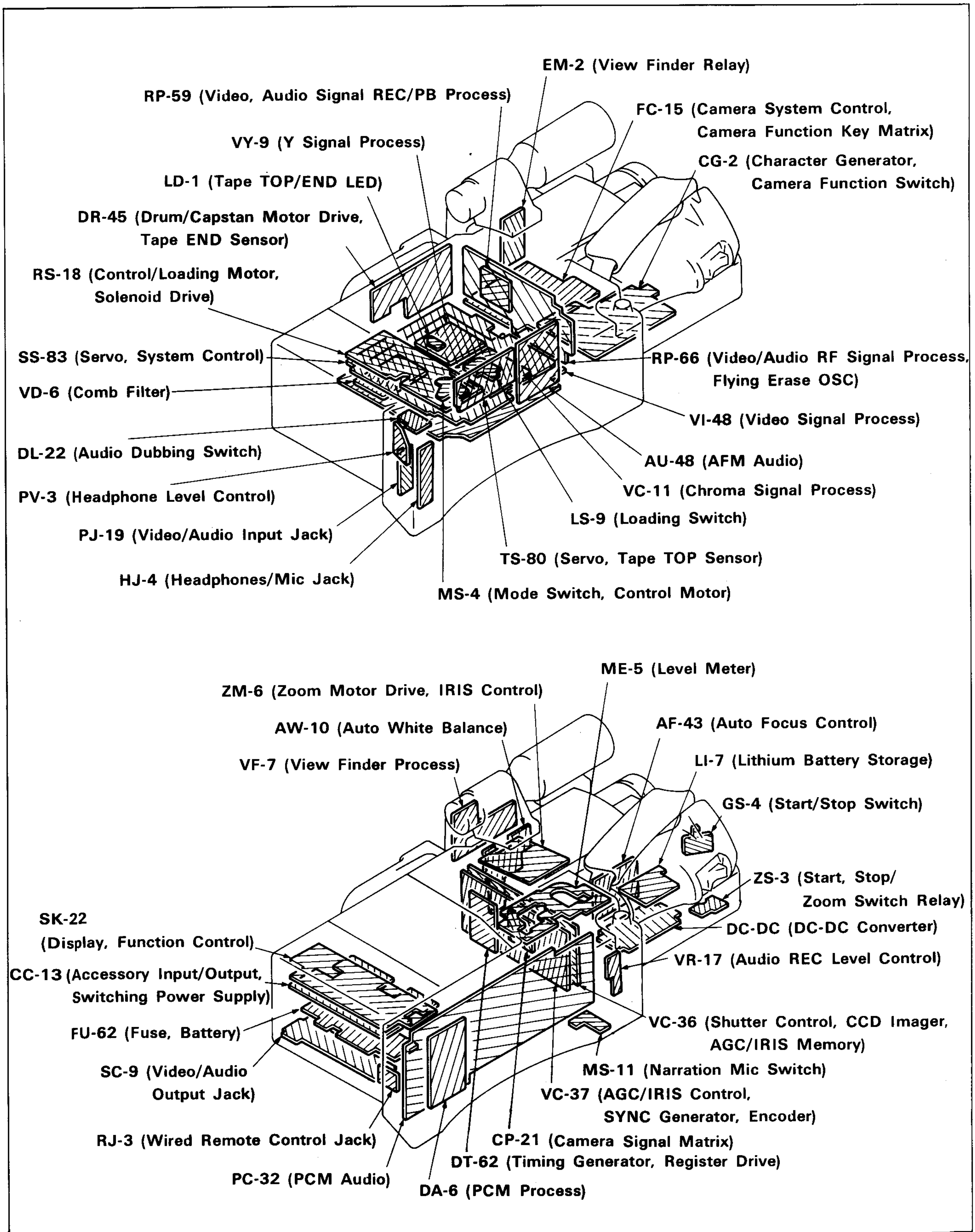
2-26. INTERNAL VIEWS


Drum
Rotary upper drum assy (DGR-30-R)
A-7049-160-A
Drum assy (DGH-30A-R)
A-7048-159-A
S reel table assy
X-3686-571-2
TAPE END sensor
8-729-700-10
Capstan shaft
Threading ring assy
A-7040-057-A
Iris assy
3-707-438-01
PM901
Brake solenoid
1-454-377-21
PZ motor assy
3-707-418-01
S902
RECOG SW
1-554-942-11
Camera DC-DC converter
1-464-897-11
T reel table assy
X-3686-572-2
TAPE TOP sensor
8-729-700-10
Pinch roller assy
X-3686-892-1
L motor assy
A-7040-067-A
AF motor assy
3-707-417-01
TAPE TOP/END LED
A-7070-024-A

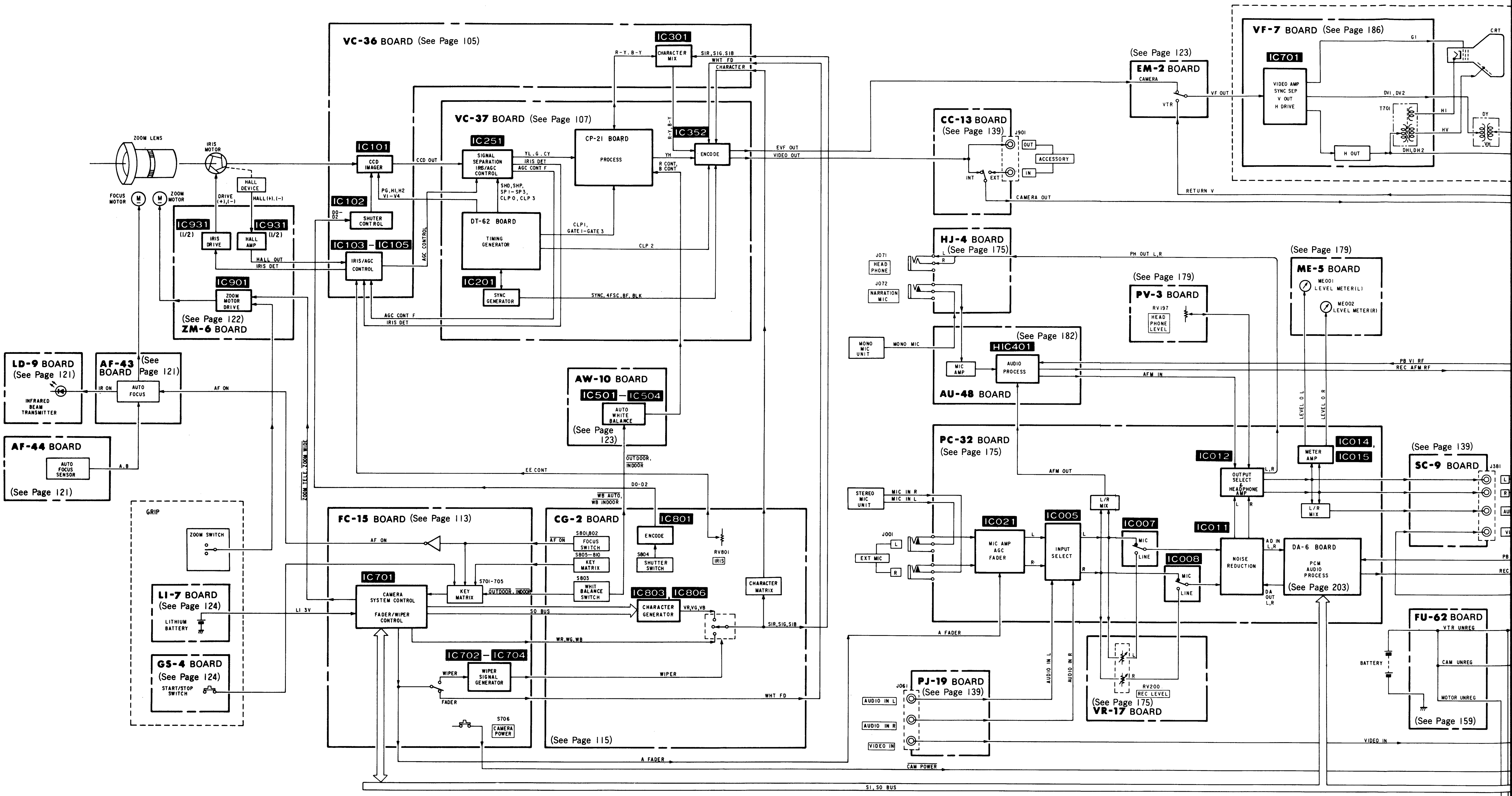

L motor assy
A-7040-067-A
Drum motor
Change gear assy
X-3686-520-1
M902
Capstan motor
8-835-196-01
Timing belt
3-686-646-01

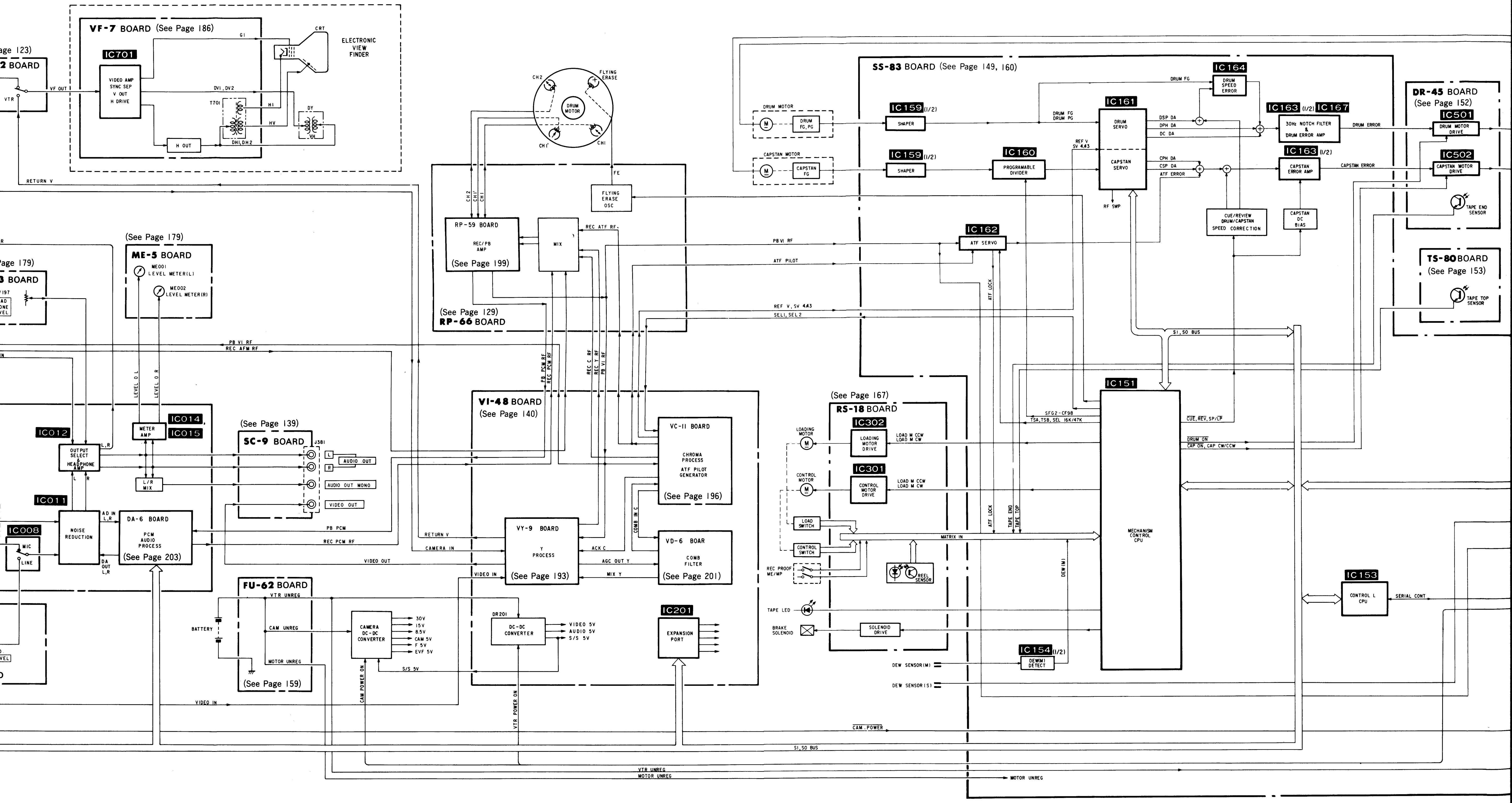
SECTION 3
DIAGRAMS

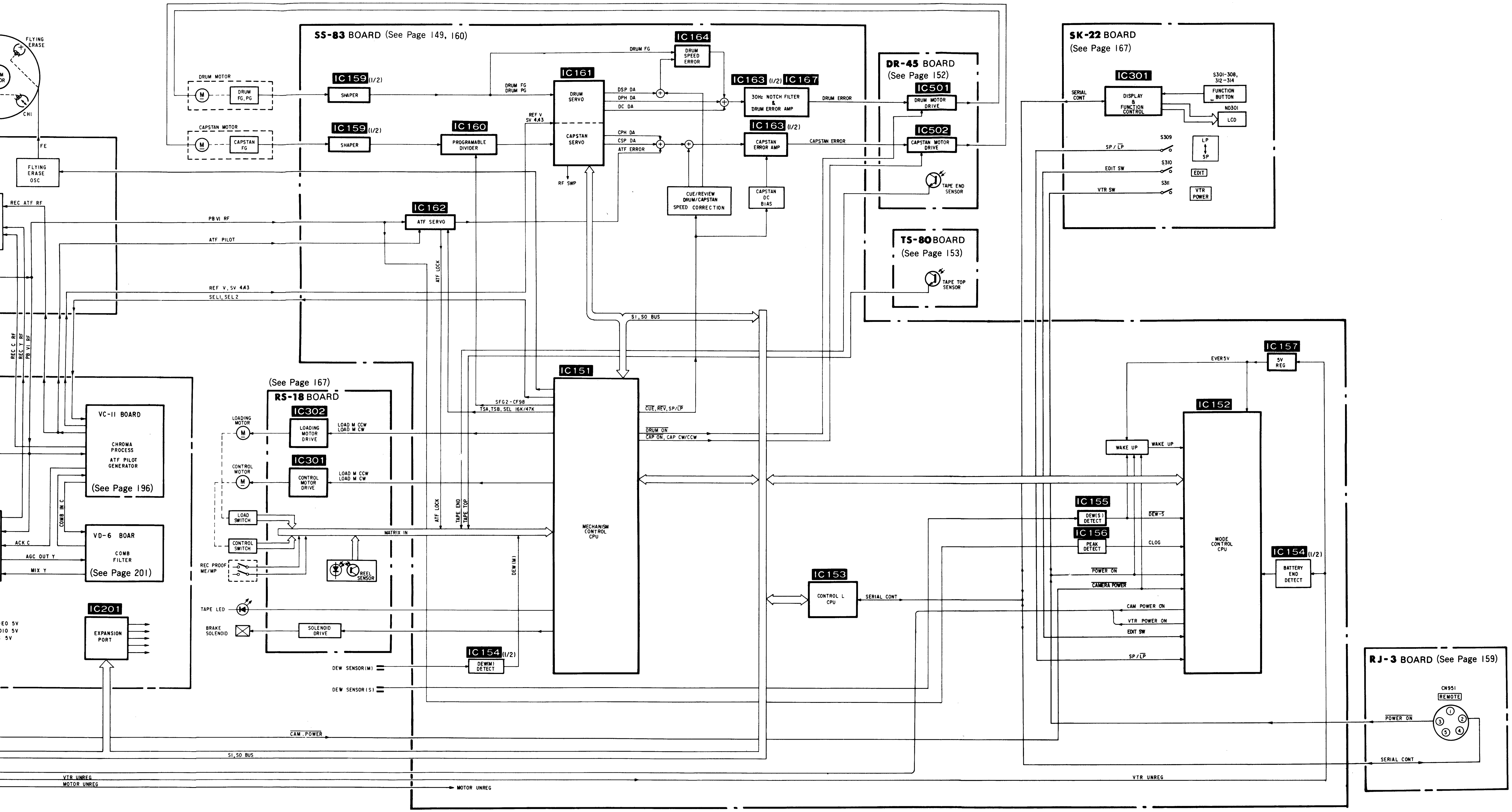
3-1. CIRCUIT BOARDS LOCATION


EM-2 (View Finder Relay)
RP-59 (Video, Audio Signal REC/PB Process)
FC-15 (Camera System Control, Camera Function Key Matrix)
VY-9 (Y Signal Process)
CG-2 (Character Generator, Camera Function Switch)
LD-1 (Tape TOP/END LED)
DR-45 (Drum/Capstan Motor Drive, Tape END Sensor)
RS-18 (Control/Loading Motor, Solenoid Drive)
SS-83 (Servo, System Control)
RP-66 (Video/Audio RF Signal Process, Flying Erase OSC)
VD-6 (Comb Filter)
VI-48 (Video Signal Process)
DL-22 (Audio Dubbing Switch)
AU-48 (AFM Audio)
PV-3 (Headphone Level Control)
VC-11 (Chroma Signal Process)
LS-9 (Loading Switch)
PJ-19 (Video/Audio Input Jack)
TS-80 (Servo, Tape TOP Sensor)
HJ-4 (Headphones/Mic Jack)
MS-4 (Mode Switch, Control Motor)
ME-5 (Level Meter)
ZM-6 (Zoom Motor Drive, IRIS Control)
AF-43 (Auto Focus Control)
AW-10 (Auto White Balance)
LI-7 (Lithium Battery Storage)
VF-7 (View Finder Process)
GS-4 (Start/Stop Switch)
ZS-3 (Start, Stop/ Zoom Switch Relay)
SK-22 (Display, Function Control)
DC-DC (DC-DC Converter)
CC-13 (Accessory Input/Output, Switching Power Supply)
VR-17 (Audio REC Level Control)
FU-62 (Fuse, Battery)
VC-36 (Shutter Control, CCD Imager, AGC/IRIS Memory)
SC-9 (Video/Audio Output Jack)
MS-11 (Narration Mic Switch)
VC-37 (AGC/IRIS Control, SYNC Generator, Encoder)
RJ-3 (Wired Remote Control Jack)
CP-21 (Camera Signal Matrix)
DT-62 (Timing Generator, Register Drive)
PC-32 (PCM Audio)
DA-6 (PCM Process)

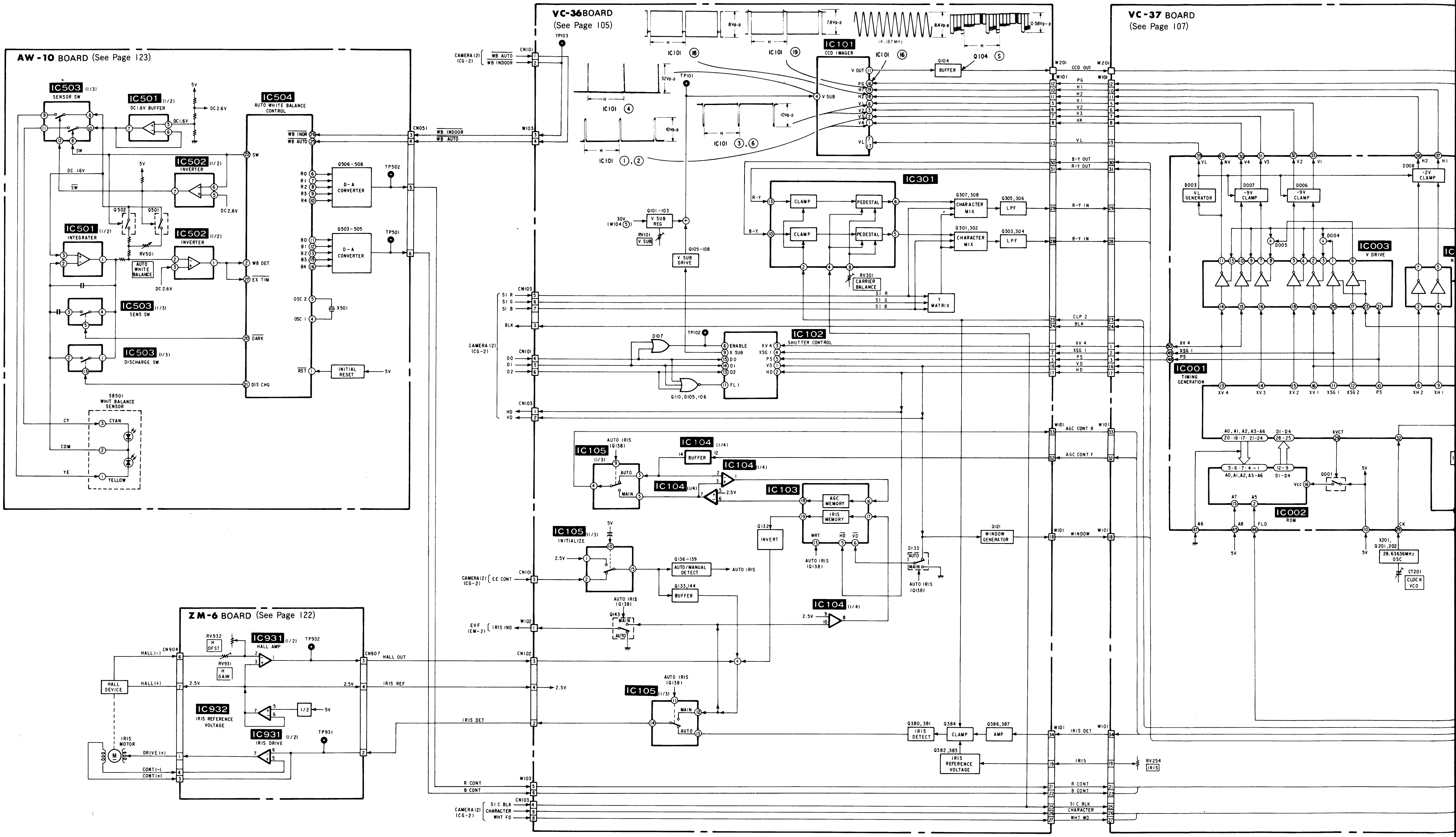
3-2. OVERALL BLOCK DIAGRAM

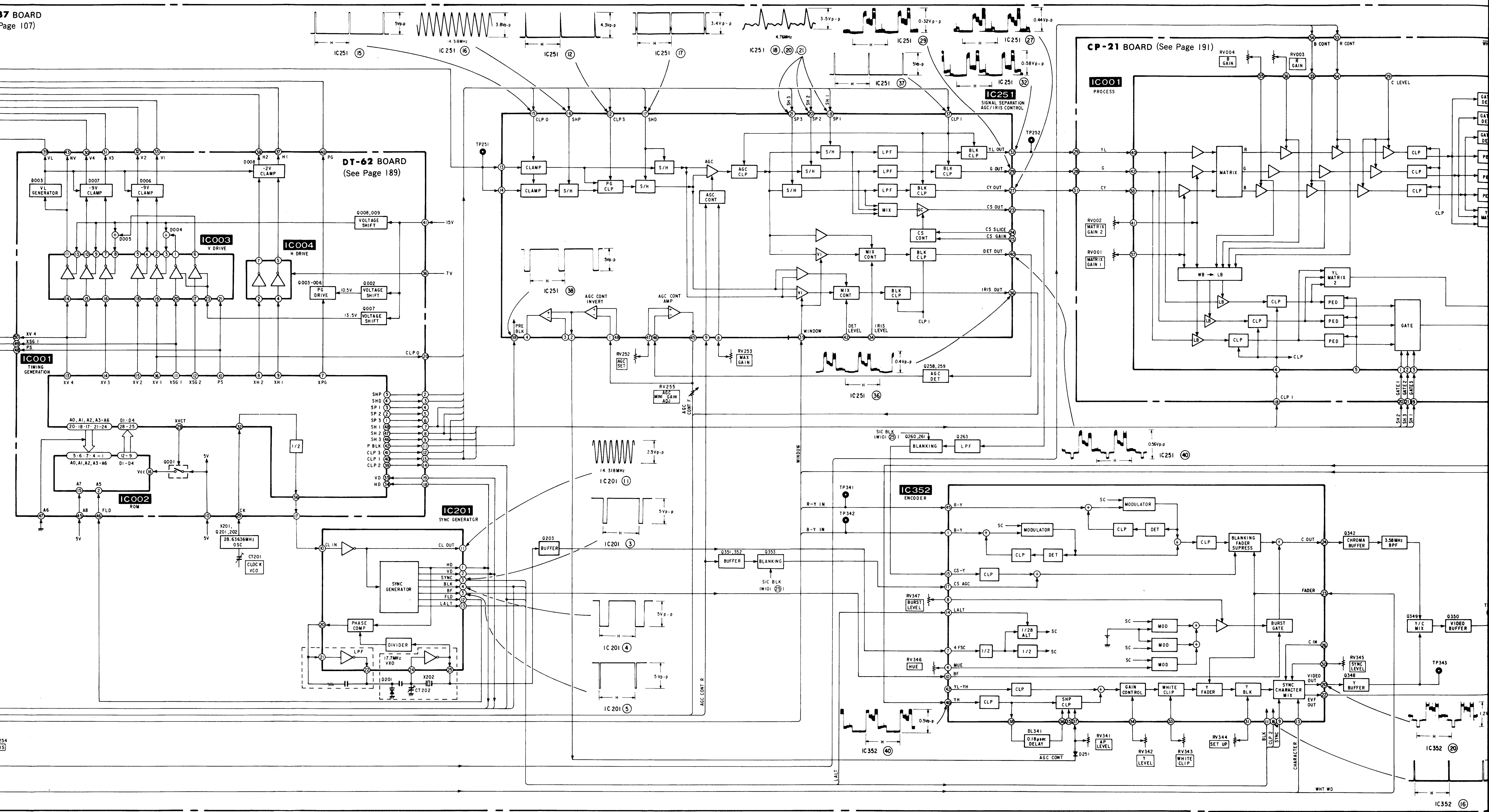

VC-36 BOARD (See Page 105)
IC301
CHARACTER MIX
R-Y, B-Y
SIR, SIG, SIB
WHT FD
CHARACTER
VC-37 BOARD (See Page 107)
IC251
SIGNAL SEPARATION IRIS/AGC CONTROL
YL, G, CY
IRIS DET
AGC CONT F
CP-21 BOARD
PROCESS
IC352
ENCODE
YH
R CONT, B CONT
EVF OUT
VIDEO OUT
ZOOM LENS
IRIS MOTOR
HALL DEVICE
FOCUS MOTOR
ZOOM MOTOR
DRIVE (+),(-)
HALL(+),(-)
IC101
CCD IMAGER
CCD OUT
PG, H1, H2, V1-V4
IC102
SHUTER CONTROL
D0-D2
IC103 - IC105
IRIS/AGC CONTROL
AGC CONTROL
SHD, SHP, SP1-SP3, CLP0, CLP3
DT-62 BOARD
TIMING GENERATOR
CLP1, GATE1-GATE3
CLP2
IC201
SYNC GENERATOR
SYNC, 4FSC, BF, BLK
IC931 (1/2)
IRIS DRIVE
IC931 (1/2)
HALL AMP
HALL OUT
IRIS DET
IC901
ZOOM MOTOR DRIVE
(See Page 122)
ZM-6 BOARD
AGC CONT F
IRIS DET
LD-9 BOARD (See Page 121)
INFRARED BEAM TRANSMITTER
AF-43 BOARD (See Page 121)
IR ON
AUTO FOCUS
AF ON
AF-44 BOARD
AUTO FOCUS SENSOR
A, B
(See Page 121)
AW-10 BOARD
IC501 - IC504
AUTO WHITE BALANCE
(See Page 123)
OUTDOOR, INDOOR
EE CONT
D0-D2
WB AUTO, WB INDOOR
ZOOM TELE, ZOOM WIDE
GRIP
ZOOM SWITCH
LI-7 BOARD (See Page 124)
LITHIUM BATTERY
LI 3V
GS-4 BOARD (See Page 124)
START/STOP SWITCH
FC-15 BOARD (See Page 113)
AF ON
IC701
CAMERA SYSTEM CONTROL FADER/WIPER CONTROL
KEY MATRIX
S701-705
OUTDOOR, INDOOR
SO BUS
WR, WG, WB
IC702 - IC704
WIPER
WIPER SIGNAL GENERATOR
FADER
S706
CAMERA POWER
CG-2 BOARD
S801, 802
FOCUS SWITCH
S805-810
KEY MATRIX
S803
WHIT BALANCE SWITCH
IC801
ENCODE
S804
SHUTTER SWITCH
RV801
IRIS
IC803, IC806
CHARACTER GENERATOR
VR, VG, VB
CHARACTER MATRIX
SIR, SIG, SIB
WIPER
WHT FD
(See Page 115)
A FADER
CAM POWER
SI, SO BUS
(See Page 123)
EM-2 BOARD
CAMERA
VTR
VF OUT
VF-7 BOARD (See Page 186)
IC701
VIDEO AMP SYNC SEP V OUT H DRIVE
G1
CRT
DV1, DV2
T701
H1
HV
DY
H OUT
DH1, DH2
VH
RETURN V
CC-13 BOARD (See Page 139)
J901
OUT
IN
ACCESSORY
INT
EXT
CAMERA OUT
HJ-4 BOARD (See Page 175)
J071
HEAD PHONE
J072
NARRATION MIC
L
R
PH OUT L, R
MONO MIC UNIT
MONO MIC
(See Page 182)
HIC401
MIC AMP
AUDIO PROCESS
AU-48 BOARD
AFM IN
PB V1 RF
REC AFM RF
(See Page 179)
PV-3 BOARD
RV197
HEAD PHONE LEVEL
(See Page 179)
ME-5 BOARD
ME001
LEVEL METER(L)
ME002
LEVEL METER(R)
LEVEL O L
LEVEL O R
PC-32 BOARD (See Page 175)
AFM OUT
STEREO MIC UNIT
MIC IN R
MIC IN L
J001
EXT MIC
IC021
MIC AMP AGC FADER
IC005
INPUT SELECT
L/R MIX
IC007
MIC
LINE
IC008
MIC
LINE
IC012
OUTPUT SELECT & HEADPHONE AMP
IC011
NOISE REDUCTION
IC014, IC015
METER AMP
L/R MIX
AD IN L, R
DA OUT L, R
DA-6 BOARD
PCM AUDIO PROCESS
(See Page 203)
(See Page 139)
SC-9 BOARD
J381
A FADER
AUDIO IN L
AUDIO IN R
VR-17 BOARD
RV200
REC LEVEL
(See Page 175)
PJ-19 BOARD (See Page 139)
J061
AUDIO IN L
AUDIO IN R
VIDEO IN
VIDEO IN
FU-62 BOARD
VTR UNREG
CAM UNREG
MOTOR UNREG
BATTERY
(See Page 159)
PB
REC

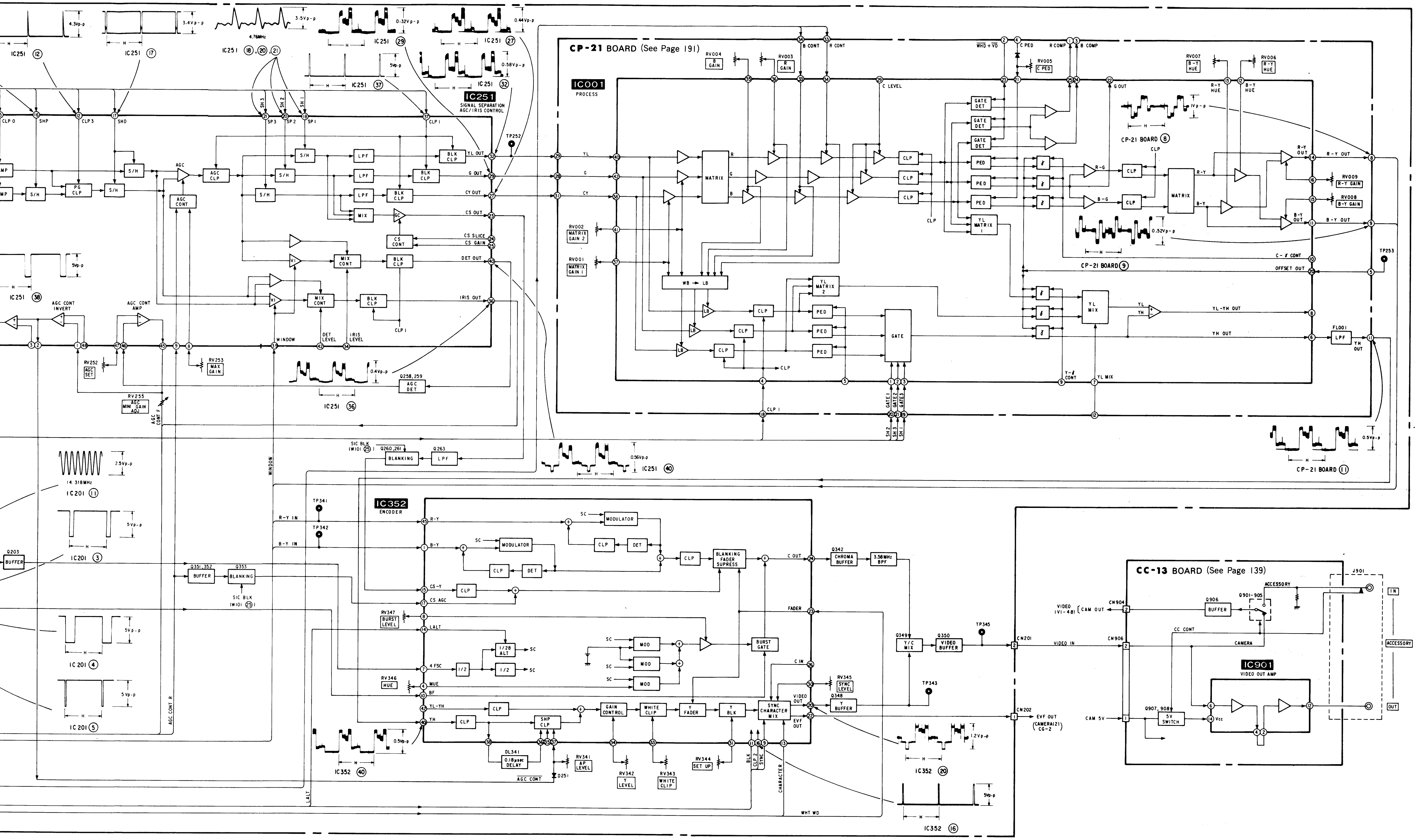

VF-7 BOARD (See Page 186)
IC701
VIDEO AMP
SYNC SEP
V OUT
H DRIVE
H OUT
T701
DY
CRT
ELECTRONIC VIEW FINDER
GI
DV1, DV2
DH1, DH2
HI
HV
VF OUT
VTR
RETURN V
age 123)
2 BOARD
FLYING ERASE
CH2
CH1'
CH1
DRUM MOTOR
FE
FLYING ERASE OSC
RP-59 BOARD
REC/PB AMP
(See Page 199)
MIX
REC ATF RF
(See Page 129)
RP-66 BOARD
(See Page 179)
ME-5 BOARD
ME001 LEVEL METER(L)
ME002 LEVEL METER(R)
LEVEL O L
LEVEL O R
age 179)
3 BOARD
PB VI RF
REC AFM RF
IC012
OUTPUT SELECT & HEADPHONE AMP
IC014
IC015
METER AMP
L/R MIX
IC011
NOISE REDUCTION
IC008
MIC
LINE
AD IN L,R
DA OUT L,R
DA-6 BOARD
PCM AUDIO PROCESS
(See Page 203)
(See Page 139)
SC-9 BOARD
J381
AUDIO OUT
AUDIO OUT MONO
VIDEO OUT
PB PCM
REC PCM RF
VIDEO OUT
RETURN V
CAMERA IN
VIDEO IN
PB PCM RF
REC PCM RF
REC C RF
REC Y RF
PB VI RF
VI-48 BOARD
(See Page 140)
VC-11 BOARD
CHROMA PROCESS
ATF PILOT GENERATOR
(See Page 196)
COMB IN C
VY-9 BOARD
Y PROCESS
(See Page 193)
ACK C
AGC OUT Y
MIX Y
VD-6 BOAR
COMB FILTER
(See Page 201)
FU-62 BOARD
VTR UNREG
CAM UNREG
MOTOR UNREG
BATTERY
(See Page 159)
CAMERA DC-DC CONVERTER
30V
15V
8.5V
CAM 5V
F 5V
EVF 5V
S/S 5V
CAM POWER ON
DR201
DC-DC CONVERTER
VIDEO 5V
AUDIO 5V
S/S 5V
VTR POWER ON
IC201
EXPANSION PORT
VIDEO IN
SS-83 BOARD (See Page 149, 160)
DRUM MOTOR
DRUM FG, PG
CAPSTAN MOTOR
CAPSTAN FG
IC159 (1/2)
SHAPER
IC159 (1/2)
SHAPER
IC160
PROGRAMABLE DIVIDER
IC161
DRUM SERVO
CAPSTAN SERVO
RF SWP
DRUM FG
DRUM FG
DRUM PG
REF V
SV 4.43
IC164
DRUM SPEED ERROR
DSP DA
DPH DA
DC DA
CPH DA
CSP DA
ATF ERROR
IC163 (1/2)
IC167
30Hz NOTCH FILTER & DRUM ERROR AMP
IC163 (1/2)
CAPSTAN ERROR AMP
CUE/REVIEW DRUM/CAPSTAN SPEED CORRECTION
CAPSTAN DC BIAS
DRUM ERROR
CAPSTAN ERROR
IC162
ATF SERVO
PB VI RF
ATF PILOT
ATF LOCK
REF V, SV 4.43
SEL1, SEL2
SI, SO BUS
DR-45 BOARD
(See Page 152)
IC501
DRUM MOTOR DRIVE
IC502
CAPSTAN MOTOR DRIVE
TAPE END SENSOR
TS-80 BOARD
(See Page 153)
TAPE TOP SENSOR
(See Page 167)
RS-18 BOARD
LOADING MOTOR
IC302
LOADING MOTOR DRIVE
LOAD M CCW
LOAD M CW
CONTROL MOTOR
IC301
CONTROL MOTOR DRIVE
LOAD M CCW
LOAD M CW
LOAD SWITCH
CONTROL SWITCH
REC PROOF ME/MP
REEL SENSOR
TAPE LED
BRAKE SOLENOID
SOLENOID DRIVE
MATRIX IN
ATF LOCK
TAPE END
TAPE TOP
DEW (M)
IC151
MECHANISM CONTROL CPU
SFG2-CF98
TSA, TSB, SEL 16K/47K
CUE, REV, SP/LP
DRUM ON
CAP ON, CAP CW/CCW
IC154 (1/2)
DEW(M) DETECT
DEW SENSOR(M)
DEW SENSOR(S)
IC153
CONTROL L CPU
SERIAL CONT
CAM. POWER
SI, SO BUS
VTR UNREG
MOTOR UNREG
MOTOR UNREG


FLYING ERASE
CHI
FE
FLYING ERASE OSC
REC ATF RF
SS-83 BOARD (See Page 149, 160)
DRUM MOTOR
DRUM FG, PG
CAPSTAN MOTOR
CAPSTAN FG
IC159 (1/2)
SHAPER
IC159 (1/2)
SHAPER
IC160
PROGRAMABLE DIVIDER
DRUM FG
DRUM FG
DRUM PG
IC161
DRUM SERVO
CAPSTAN SERVO
REF V
SV 4A3
RF SWP
IC164
DRUM SPEED ERROR
DSP DA
DPH DA
DC DA
CPH DA
CSP DA
ATF ERROR
IC163 (1/2) IC167
30Hz NOTCH FILTER & DRUM ERROR AMP
IC163 (1/2)
CAPSTAN ERROR AMP
CAPSTAN DC BIAS
CUE/REVIEW DRUM/CAPSTAN SPEED CORRECTION
DRUM ERROR
CAPSTAN ERROR
DR-45 BOARD (See Page 152)
IC501
DRUM MOTOR DRIVE
IC502
CAPSTAN MOTOR DRIVE
TAPE END SENSOR
TS-80 BOARD (See Page 153)
TAPE TOP SENSOR
IC162
ATF SERVO
PB VI RF
ATF PILOT
ATF LOCK
REF V, SV 4A3
SEL1, SEL2
SI, SO BUS
REC C RF
REC Y RF
PB VI RF
VC-11 BOARD
CHROMA PROCESS
ATF PILOT GENERATOR
(See Page 196)
COMB IN C
VD-6 BOAR
COMB FILTER
(See Page 201)
ACK C
AGC OUT Y
MIX Y
EO 5V
IO 5V
5V
IC201
EXPANSION PORT
(See Page 167)
RS-18 BOARD
LOADING MOTOR
IC302
LOADING MOTOR DRIVE
LOAD M CCW
LOAD M CW
CONTROL MOTOR
IC301
CONTROL MOTOR DRIVE
LOAD M CCW
LOAD M CW
LOAD SWITCH
CONTROL SWITCH
REC PROOF ME/MP
REEL SENSOR
TAPE LED
BRAKE SOLENOID
SOLENOID DRIVE
MATRIX IN
ATF LOCK
TAPE END
TAPE TOP
DEW (M)
SFG2-CF98
TSA, TSB, SEL 16K/47K
IC151
MECHANISM CONTROL CPU
CUE, REV, SP/LP
DRUM ON
CAP ON, CAP CW/CCW
IC154 (1/2)
DEW (M) DETECT
DEW SENSOR (M)
DEW SENSOR (S)
CAM POWER
SI, SO BUS
VTR UNREG
MOTOR UNREG
MOTOR UNREG
IC153
CONTROL L CPU
SERIAL CONT
SK-22 BOARD (See Page 167)
IC301
DISPLAY & FUNCTION CONTROL
SERIAL CONT
S301-308, 312-314
FUNCTION BUTTON
ND301
LCD
S309
SP/LP
LP ↕ SP
S310
EDIT SW
EDIT
S311
VTR SW
VTR POWER
IC157
5V REG
EVER5V
IC152
WAKE UP
WAKE UP
IC155
DEW (S) DETECT
DEW-S
IC156
PEAK DETECT
CLOG
MODE CONTROL CPU
IC154 (1/2)
BATTERY END DETECT
POWER ON
CAMERA POWER
CAM POWER ON
VTR POWER ON
EDIT SW
SP/LP
RJ-3 BOARD (See Page 159)
CN951
REMOTE
POWER ON
SERIAL CONT
VTR UNREG

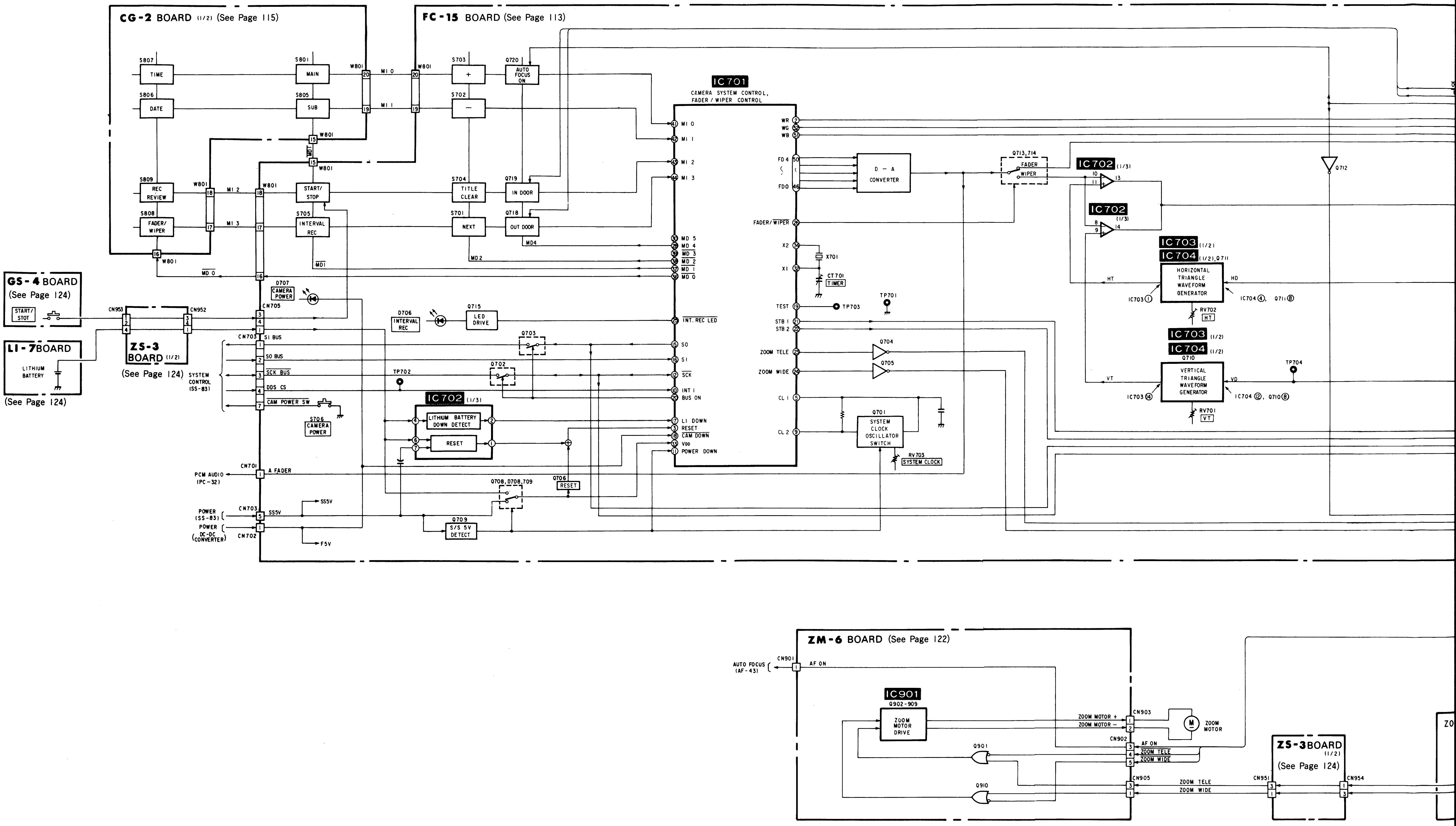
3-3. CAMERA BLOCK DIAGRAM (1)

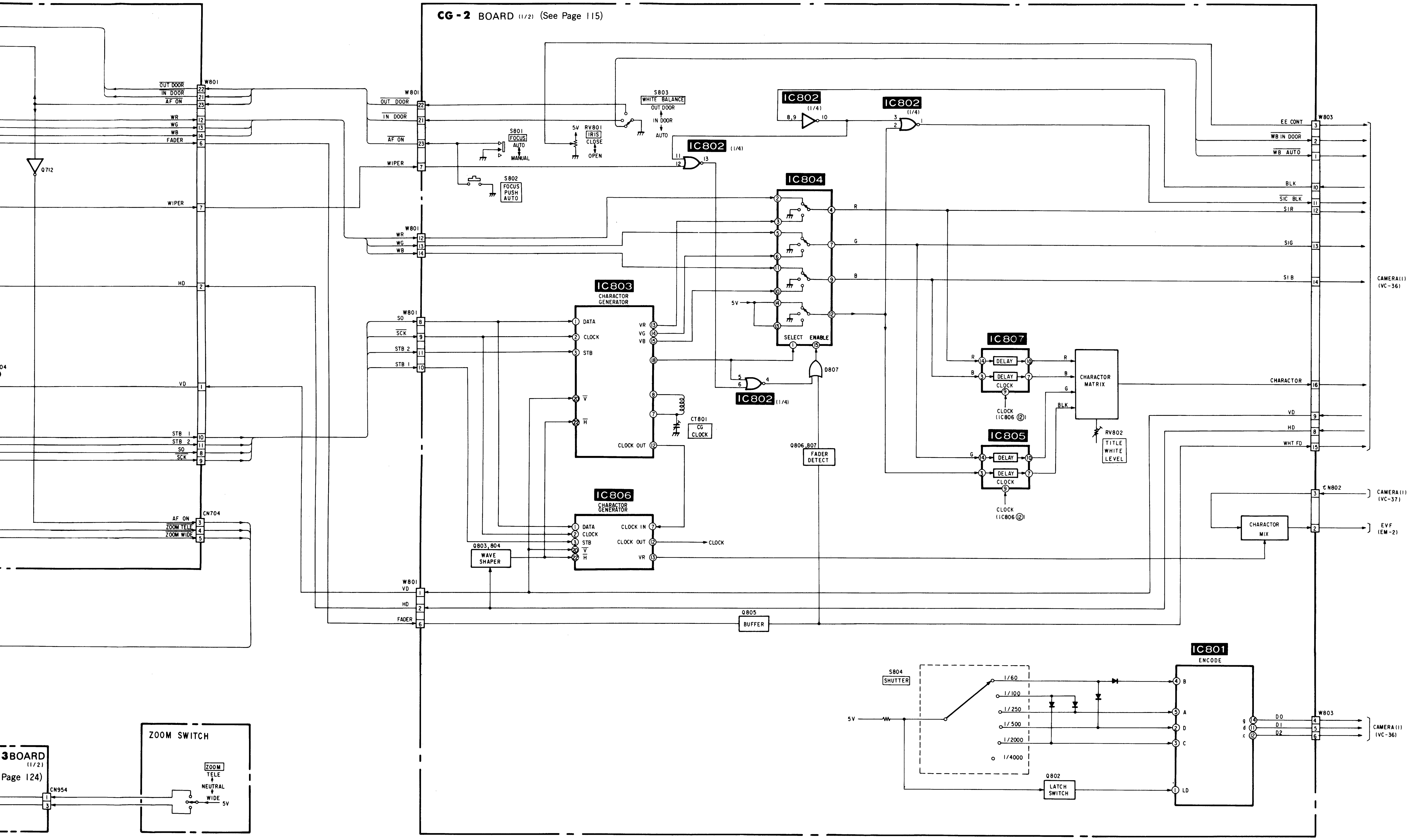

AW-10 BOARD (See Page 123)
IC503 (1/3) SENSOR SW
IC501 (1/2) DC1.6V BUFFER
IC504 AUTO WHITE BALANCE CONTROL
IC502 (1/2) INVERTER
IC501 (1/2) INTEGRATER
IC502 (1/2) INVERTER
RV501 AUTO WHITE BALANCE
IC503 (1/3) SENS SW
IC503 (1/3) DISCHARGE SW
Q506-508 D-A CONVERTER
Q503-505 D-A CONVERTER
TP502
TP501
X501
INITIAL RESET
S8501 WHIT BALANCE SENSOR
CYAN
YELLOW
CY
COM
YE
WB INDR
WB AUTO
SW
WB DET
EX TIM
DARK
DIS CHG
RST
OSC 2
OSC 1
DC 1.6V
DC 2.6V
5V
CN051
WB INDOOR
WB AUTO
VC-36 BOARD (See Page 105)
TP103
CAMERA (2) (CG-2)
CN101
IC101 ⑱
IC101 ⑲
IC101 ⑯
IC101 ④
IC101 ③, ⑥
IC101 ①, ②
IC101 CCD IMAGER
Q104 BUFFER
Q104 ⑤
8Vp-p
7.8Vp-p
8.4Vp-p
0.58Vp-p
32Vp-p
10Vp-p
14.187MHz
TP101
V OUT
V SUB
PG
H1
H2
V1
V2
V3
V4
VL
Q101-103 V SUB REG
30V (W104 ⑤)
RV101 V SUB
Q105-108 V SUB DRIVE
IC301
CLAMP
PEDESTAL
R-Y
B-Y
Q307, 308 CHARACTER MIX
Q301, 302 CHARACTER MIX
Q305, 306 LPF
Q303, 304 LPF
RV301 CARRIER BALANCE
Y MATRIX
SI R
SI G
SI B
BLK
D107
TP102
IC102 SHUTTER CONTROL
ENABLE
X SUB
D0
D1
D2
FL1
XV4
XSG1
PS
VD
HD
Q110, D105, 106
IC105 (1/3) AUTO IRIS (Q138)
IC104 (1/4) BUFFER
IC104 (1/4)
IC103
AGC MEMORY
IRIS MEMORY
WRT
AUTO
MAIN
2.5V
Q132 INVERT
AUTO IRIS (Q138)
Q121 WINDOW GENERATOR
D133
IC105 (1/3) INITIALIZE
Q136-139 AUTO/MANUAL DETECT
Q133, 144 BUFFER
AUTO IRIS
Q143
EE CONT
EVF (EM-2) IRIS IND
W102
CN102
IC104 (1/4)
IC105 (1/3)
Q380, 381 IRIS DETECT
Q384 CLAMP
Q386, 387 AMP
Q382, 383 IRIS REFERENCE VOLTAGE
ZM-6 BOARD (See Page 122)
CN904
CN907
RV932 H OFST
RV931 H GAIN
IC931 (1/2) HALL AMP
TP932
HALL DEVICE
HALL (−)
HALL (+)
HALL OUT
IRIS REF
IC932 IRIS REFERENCE VOLTAGE
IC931 (1/2) IRIS DRIVE
TP931
IRIS MOTOR
DRIVE (+)
CONT (−)
CONT (+)
IRIS DET
R CONT
B CONT
S1C BLK
CHARACTER
WHT FD
W103
CN103
W201
W101
CCD OUT
B-Y OUT
R-Y OUT
R-Y IN
B-Y IN
CLP 2
AGC CONT R
AGC CONT F
WINDOW
IRIS
VC-37 BOARD (See Page 107)
D003 VL GENERATOR
D007 -9V CLAMP
D006 -9V CLAMP
D008 -2V CLAMP
D005
D004
IC003 V DRIVE
IC001 TIMING GENERATION
XV4
XV3
XV2
XV1
XSG1
XSG2
XH2
XH1
A0, A1, A2, A3-A6
D1-D4
XVCT
Q001
IC002 ROM
A7
A5
A6
A8
FLD
CK
X201, Q201, 202 28.63636MHz OSC
CT201 CLOCK VCO
RV254 IRIS


BOARD
Page 107)
DT-62 BOARD
(See Page 189)
CP-21 BOARD (See Page 191)
IC001
TIMING GENERATION
IC002
ROM
IC003
V DRIVE
IC004
H DRIVE
IC201
SYNC GENERATOR
IC251
SIGNAL SEPARATION AGC/IRIS CONTROL
IC001
PROCESS
IC352
ENCODER
D003 VL GENERATOR
D007 -9V CLAMP
D006 -9V CLAMP
D008 -2V CLAMP
D005
D004
Q008,009 VOLTAGE SHIFT
Q003-006 PG DRIVE
Q002 VOLTAGE SHIFT
Q007 VOLTAGE SHIFT
10.5V
13.5V
15V
7V
5V
XV4
XSG1
PS
XV3
XV2
XV1
XSG2
XH2
XH1
XPG
CLPG
SHP
SHD
SP1
SP2
SP3
SH1
SH2
SH3
P BLK
CLP3
CLP1
CLP2
VD
HD
A0, A1, A2, A3-A6
D1-D4
XVCT
Q001
A7
A5
A6
A8
FLD
CK
X201, Q201,202
28.63636MHz OSC
CT201 CLOCK VCO
1/2
CL IN
CL OUT
SYNC GENERATOR
HD
VD
SYNC
BLK
BF
FLD
LALT
PHASE COMP
DIVIDER
LPF
17.7MHz VXO
D201
X202
CT202
Q203 BUFFER
TP251
CLP0
SHP
CLP3
SHD
SP3
SP2
SP1
CLP1
CLAMP
S/H
PG CLP
AGC
AGC CLP
AGC CONT
LPF
BLK CLP
MIX
CS CONT
MIX CONT
YL OUT
G OUT
CY OUT
CS OUT
CS SLICE
CS GAIN
DET OUT
IRIS OUT
WINDOW
DET LEVEL
IRIS LEVEL
PRE BLK
AGC CONT INVERT
AGC CONT AMP
RV252 AGC SET
RV253 MAX GAIN
RV255 AGC MINI GAIN ADJ
AGC CONT F
AGC CONT R
Q258,259 AGC DET
TP252
SIC BLK (WIO) ㉕
Q260,261 BLANKING
Q263 LPF
Q351,352 BUFFER
Q353 BLANKING
SIC BLK (WIO) ㉕
IC251 ⑮
IC251 ⑯
4.318MHz
3.8Vp-p
IC251 ⑫
4.3Vp-p
IC251 ⑰
3.4Vp-p
IC251 ⑱,⑳,㉑
4.76MHz
3.5Vp-p
IC251 ㉙
0.32Vp-p
IC251 ㉗
0.44Vp-p
IC251 ㊲
5Vp-p
IC251 ㉜
0.58Vp-p
IC251 ㊳
5Vp-p
IC251 ㊱
0.4Vp-p
IC251 ㊵
0.56Vp-p
IC201 ⑪
14.318MHz
2.5Vp-p
IC201 ③
5Vp-p
IC201 ④
5Vp-p
IC201 ⑤
5Vp-p
IC352 ㊵
0.5Vp-p
IC352 ⑳
1.2V
IC352 ⑯
H
B CONT
R CONT
RV004 B GAIN
RV003 R GAIN
C LEVEL
YL
G
CY
R
B
MATRIX
CLP
RV002 MATRIX GAIN 2
RV001 MATRIX GAIN 1
WB → LB
LB
YL MATRIX 2
PED
GATE
CLP1
GATE 1
GATE 2
GATE 3
SH2
SH3
SH1
TP341
TP342
R-Y IN
B-Y IN
R-Y
B-Y
SC
MODULATOR
CLP
DET
BLANKING FADER SUPRESS
C OUT
Q342 CHROMA BUFFER
3.58MHz BPF
CS-Y
CS AGC
RV347 BURST LEVEL
LALT
1/28 ALT
4 FSC
1/2
MOD
BURST GATE
FADER
C IN
RV346 HUE
MUE
BF
YL-YH
YH
SHP CLP
GAIN CONTROL
WHITE CLIP
Y FADER
Y BLK
SYNC CHARACTER MIX
VIDEO OUT
EVF OUT
Q349 Y/C MIX
Q350 VIDEO BUFFER
RV345 SYNC LEVEL
Q348 Y BUFFER
TP343
DL341 0.18μsec DELAY
RV341 AP LEVEL
RV342 Y LEVEL
RV343 WHITE CLIP
RV344 SET UP
D251
AGC CONT
BLK
CLP2
SYNC
CHARACTER
WHT WD
LALT
WINDOW


CP-21 BOARD (See Page 191)
IC001
PROCESS
IC251
SIGNAL SEPARATION
AGC/IRIS CONTROL
IC352
ENCODER
CC-13 BOARD (See Page 139)
IC901
VIDEO OUT AMP
IC251 ⑫
IC251 ⑰
IC251 ⑱,⑳,㉑
IC251 ㉙
IC251 ㉗
IC251 ㊲
IC251 ㉜
IC251 ㊳
IC251 ㊱
IC251 ㊵
4.3Vp-p
3.4Vp-p
3.5Vp-p
4.76MHz
0.32Vp-p
0.44Vp-p
0.58Vp-p
5Vp-p
0.4Vp-p
0.56Vp-p
CLP O
SHP
CLP 3
SHD
SP3
SP2
SP1
CLP 1
S/H
PG CLP
AGC
AGC CLP
AGC CONT
LPF
BLK CLP
MIX
CS CONT
MIX CONT
YL OUT
G OUT
CY OUT
CS OUT
CS SLICE
CS GAIN
DET OUT
IRIS OUT
TP252
AGC CONT INVERT
AGC CONT AMP
RV252 AGC SET
RV253 MAX GAIN
RV255 MINI GAIN ADJ
AGC CONT F
WINDOW
DET LEVEL
IRIS LEVEL
Q258, 259 AGC DET
B CONT
R CONT
RV004 B GAIN
RV003 R GAIN
C LEVEL
WHD + VD
C PED
R COMP
B COMP
RV005 C PED
RV007 B-Y HUE
RV006 R-Y HUE
G OUT
R-Y HUE
B-Y HUE
YL
G
CY
MATRIX
GATE DET
PED
CLP
γ
YL MATRIX 1
YL MATRIX 2
R-G
B-G
R-Y
B-Y
R-Y OUT
B-Y OUT
RV009 R-Y GAIN
RV008 B-Y GAIN
1Vp-p
CP-21 BOARD ⑧
0.52Vp-p
CP-21 BOARD ⑨
C-γ CONT
OFFSET OUT
TP253
RV002 MATRIX GAIN 2
RV001 MATRIX GAIN 1
WB → LB
LB
GATE
YL MIX
YL
YH
YL-YH OUT
YH OUT
FL001 LPF
YH OUT
Y-γ CONT
YL MIX
CLP 1
GATE 1
GATE 2
GATE 3
SH 2
SH 3
SH 1
0.5Vp-p
CP-21 BOARD ⑪
SIC BLK (W101 ㉕)
Q260, 261 BLANKING
Q263 LPF
2.5Vp-p
14.318MHz
IC201 ⑪
5Vp-p
IC201 ③
IC201 ④
IC201 ⑤
Q203 BUFFER
Q351, 352 BUFFER
Q353 BLANKING
SIC BLK (W101 ㉕)
AGC CONT R
R-Y IN
B-Y IN
TP341
TP342
SC
MODULATOR
DET
BLANKING FADER SUPRESS
C OUT
CS-Y
CS AGC
RV347 BURST LEVEL
LALT
4FSC
1/2
1/28 ALT
RV346 HUE
MUE
BF
YL-YH
YH
MOD
BURST GATE
FADER
C IN
VIDEO OUT
EVF OUT
SHP CLP
GAIN CONTROL
WHITE CLIP
Y FADER
Y BLK
SYNC CHARACTER MIX
RV345 SYNC LEVEL
Q348 Y BUFFER
TP343
DL341 0.18μsec DELAY
RV341 AP LEVEL
RV342 Y LEVEL
RV343 WHITE CLIP
RV344 SET UP
AGC CONT
D251
BLK
CLP 2
SYNC
CHARACTER
WHT WD
0.5Vp-p
IC352 ㊵
1.2Vp-p
IC352 ⑳
5Vp-p
IC352 ⑯
Q342 CHROMA BUFFER
3.58MHz BPF
Q349 Y/C MIX
Q350 VIDEO BUFFER
TP345
CN201
CN202
EVF OUT (CAMERA(2) CG-2)
VIDEO (V1-48) CAM OUT
CN904
CN906
VIDEO IN
Q906 BUFFER
Q901-905
ACCESSORY
CC CONT
CAMERA
J901
IN
ACCESSORY
OUT
CAM 5V
Q907, 908 5V SWITCH
Vcc
H

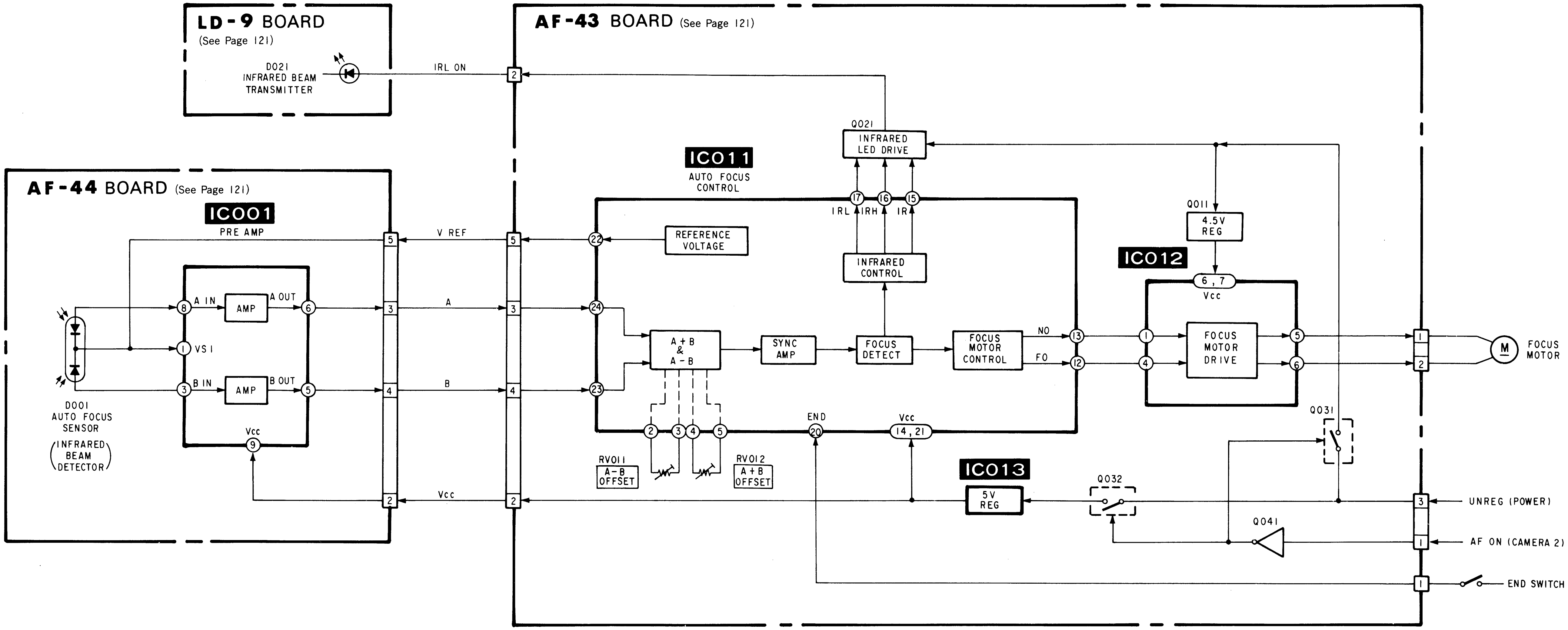
3-4. CAMERA BLOCK DIAGRAM (2)


CG-2 BOARD (1/2) (See Page 115)
FC-15 BOARD (See Page 113)
S807 TIME
S806 DATE
S801 MAIN
S805 SUB
S809 REC REVIEW
S808 FADER/WIPER
START/STOP
S705 INTERVAL REC
W801
MI 0
MI 1
MI 2
MI 3
MD 0
MDI
MD2
MD4
S703 +
S702 −
S704 TITLE CLEAR
S701 NEXT
Q720 AUTO FOCUS ON
Q719 IN DOOR
Q718 OUT DOOR
IC701 CAMERA SYSTEM CONTROL, FADER / WIPER CONTROL
MI 0
MI 1
MI 2
MI 3
MD 5
MD 4
MD 3
MD 2
MD 1
MD 0
INT. REC LED
SO
SI
SCK
INT I
BUS ON
LI DOWN
RESET
CAM DOWN
VDD
POWER DOWN
WR
WG
WB
FD4
FD0
FADER/WIPER
X2
X1
TEST
STB 1
STB 2
ZOOM TELE
ZOOM WIDE
CL 1
CL 2
D − A CONVERTER
X701
CT701 TIMER
TP701
TP703
Q704
Q705
Q701 SYSTEM CLOCK OSCILLATOR SWITCH
RV703 SYSTEM CLOCK
Q713, 714 FADER WIPER
IC702 (1/3)
IC702 (1/3)
IC703 (1/2)
IC704 (1/2), Q711
HORIZONTAL TRIANGLE WAVEFORM GENERATOR
HT
HD
IC703①
IC704④, Q711⑧
RV702 HT
IC703 (1/2)
IC704 (1/2)
Q710
VERTICAL TRIANGLE WAVEFORM GENERATOR
VT
VD
IC703⑭
IC704⑫, Q710⑧
RV701 VT
TP704
Q712
GS-4 BOARD (See Page 124)
START/STOT
LI-7BOARD
LITHIUM BATTERY
(See Page 124)
CN953
CN952
ZS-3 BOARD (1/2)
(See Page 124)
SYSTEM CONTROL (SS-83)
CN705
CN703
SI BUS
SO BUS
SCK BUS
DDS CS
CAM POWER SW
S706 CAMERA POWER
D707 CAMERA POWER
D706 INTERVAL REC
Q715 LED DRIVE
Q703
Q702
TP702
IC702 (1/3)
LITHIUM BATTERY DOWN DETECT
RESET
PCM AUDIO (PC-32)
CN701
A FADER
Q708, Q708, 709
Q706 RESET
POWER (SS-83)
POWER (DC-DC CONVERTER)
CN703
CN702
SS5V
F5V
Q709 S/S 5V DETECT
ZM-6 BOARD (See Page 122)
AUTO FOCUS (AF-43)
CN901
AF ON
IC901 Q902-909
ZOOM MOTOR DRIVE
ZOOM MOTOR +
ZOOM MOTOR −
CN903
ZOOM MOTOR
CN902
AF ON
ZOOM TELE
ZOOM WIDE
Q901
Q910
CN905
ZOOM TELE
ZOOM WIDE
CN951
CN954
ZS-3BOARD (1/2)
(See Page 124)

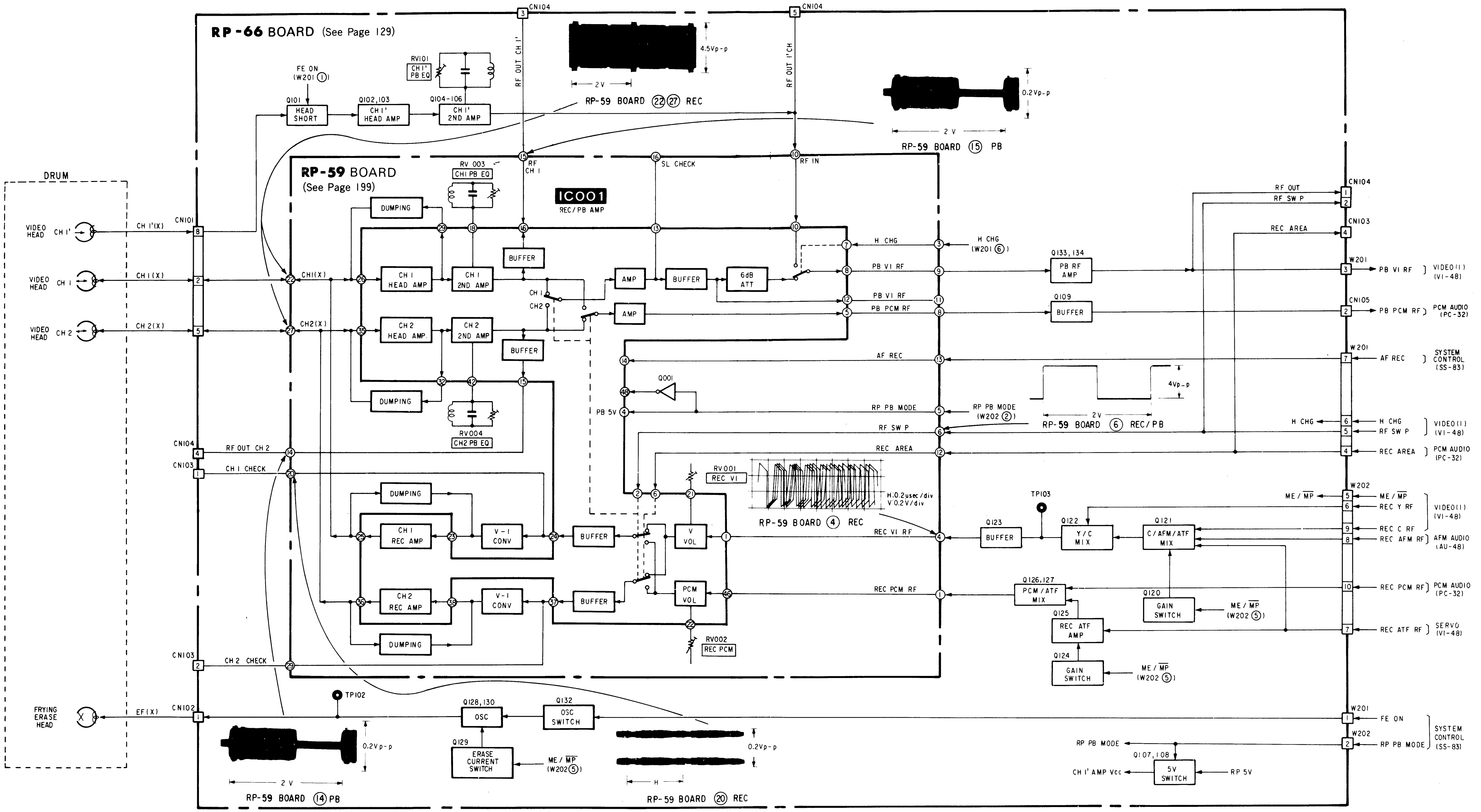

CG-2 BOARD (1/2) (See Page 115)
W801
OUT DOOR
IN DOOR
AF ON
WR
WG
WB
FADER
WIPER
HD
VD
STB 1
STB 2
SO
SCK
Q712
CN704
ZOOM TELE
ZOOM WIDE
S803
WHITE BALANCE
OUT DOOR
IN DOOR
AUTO
S801
FOCUS
AUTO
MANUAL
S802
FOCUS
PUSH
AUTO
5V
RV801
IRIS
CLOSE
OPEN
IC802 (1/4)
IC804
R
G
B
SELECT
ENABLE
IC803
CHARACTOR
GENERATOR
DATA
CLOCK
STB
VR
VG
VB
CLOCK OUT
CT801
CG
CLOCK
D807
Q806, 807
FADER
DETECT
IC806
CHARACTOR
GENERATOR
CLOCK IN
CLOCK OUT
Q803, 804
WAVE
SHAPER
Q805
BUFFER
IC807
DELAY
CLOCK
CLOCK
(IC806 ⑫)
IC805
CHARACTOR
MATRIX
BLK
RV802
TITLE
WHITE
LEVEL
W803
EE CONT
WB IN DOOR
WB AUTO
SIC BLK
SIR
SIG
SIB
CHARACTOR
WHT FD
CAMERA(1)
(VC-36)
CN802
CAMERA(1)
(VC-37)
EVF
(EM-2)
CHARACTOR
MIX
IC801
ENCODE
S804
SHUTTER
1/60
1/100
1/250
1/500
1/2000
1/4000
Q802
LATCH
SWITCH
LD
D0
D1
D2
ZOOM SWITCH
ZOOM
TELE
NEUTRAL
WIDE
5V
3BOARD
(1/2)
Page 124)
CN954

3-5. AUTO FOCUS BLOCK DIAGRAM

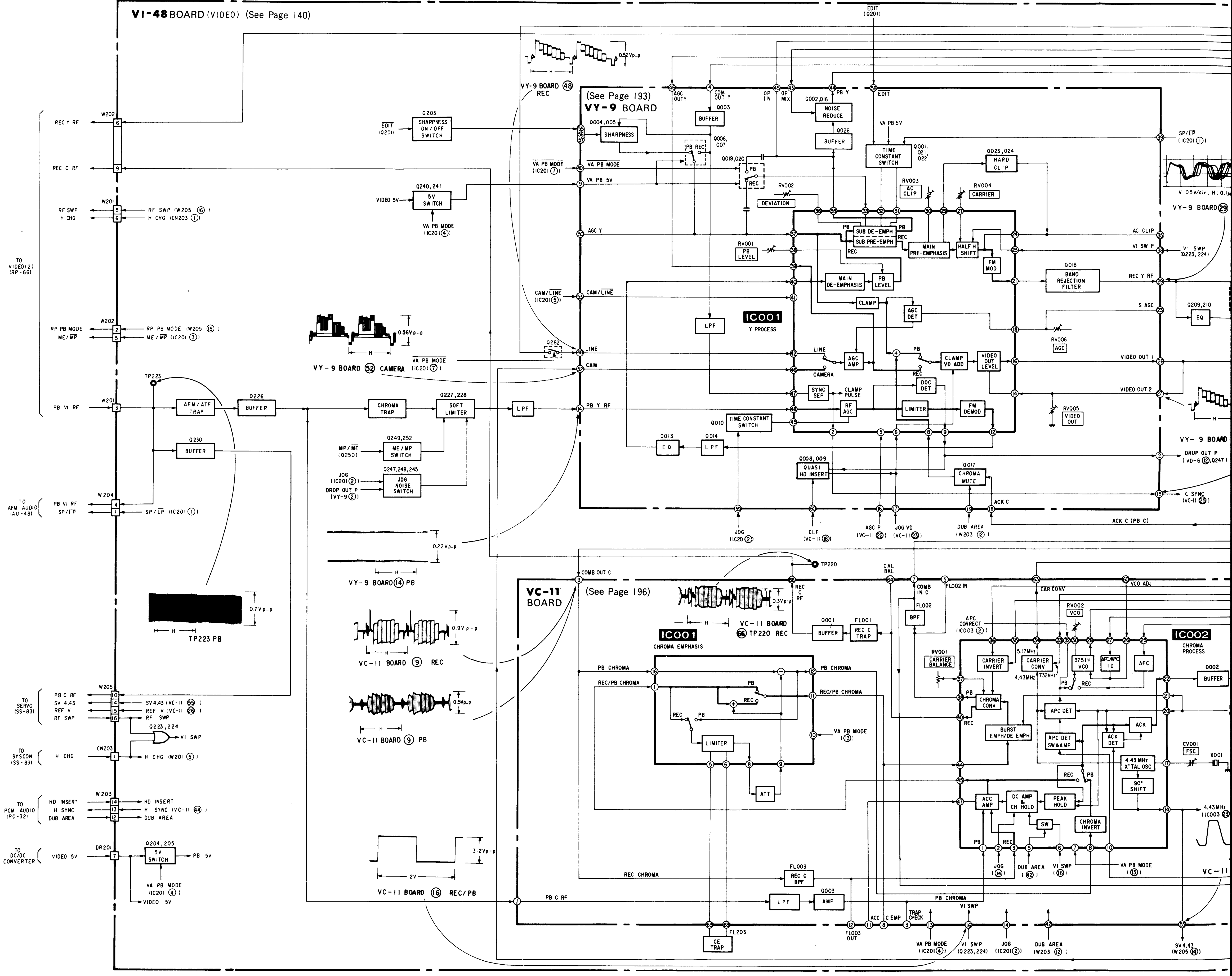
3-6. VIDE

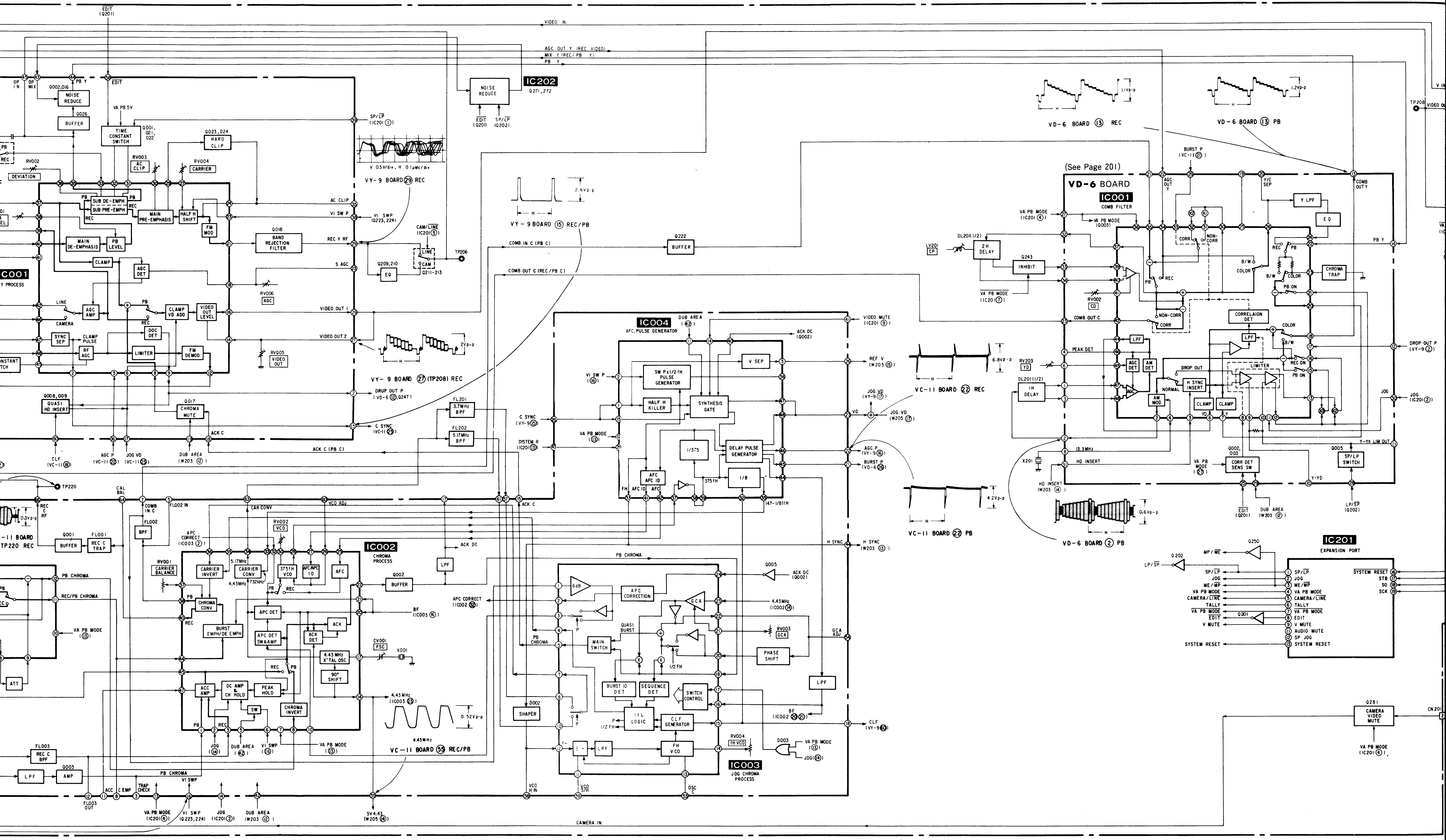

LD-9 BOARD
(See Page 121)
D021
INFRARED BEAM
TRANSMITTER
IRL ON
AF-43 BOARD (See Page 121)
AF-44 BOARD (See Page 121)
IC001
PRE AMP
V REF
A IN
AMP
A OUT
VS1
B IN
B OUT
Vcc
A
B
D001
AUTO FOCUS
SENSOR
(INFRARED BEAM DETECTOR)
IC011
AUTO FOCUS
CONTROL
Q021
INFRARED
LED DRIVE
IRL
IRH
IR
INFRARED
CONTROL
REFERENCE
VOLTAGE
A+B
&
A-B
SYNC
AMP
FOCUS
DETECT
FOCUS
MOTOR
CONTROL
NO
FO
END
14, 21
RV011
A-B
OFFSET
RV012
A+B
OFFSET
Q011
4.5V
REG
IC012
6, 7
FOCUS
MOTOR
DRIVE
M
FOCUS
MOTOR
Q031
IC013
5V
REG
Q032
Q041
UNREG (POWER)
AF ON (CAMERA 2)
END SWITCH

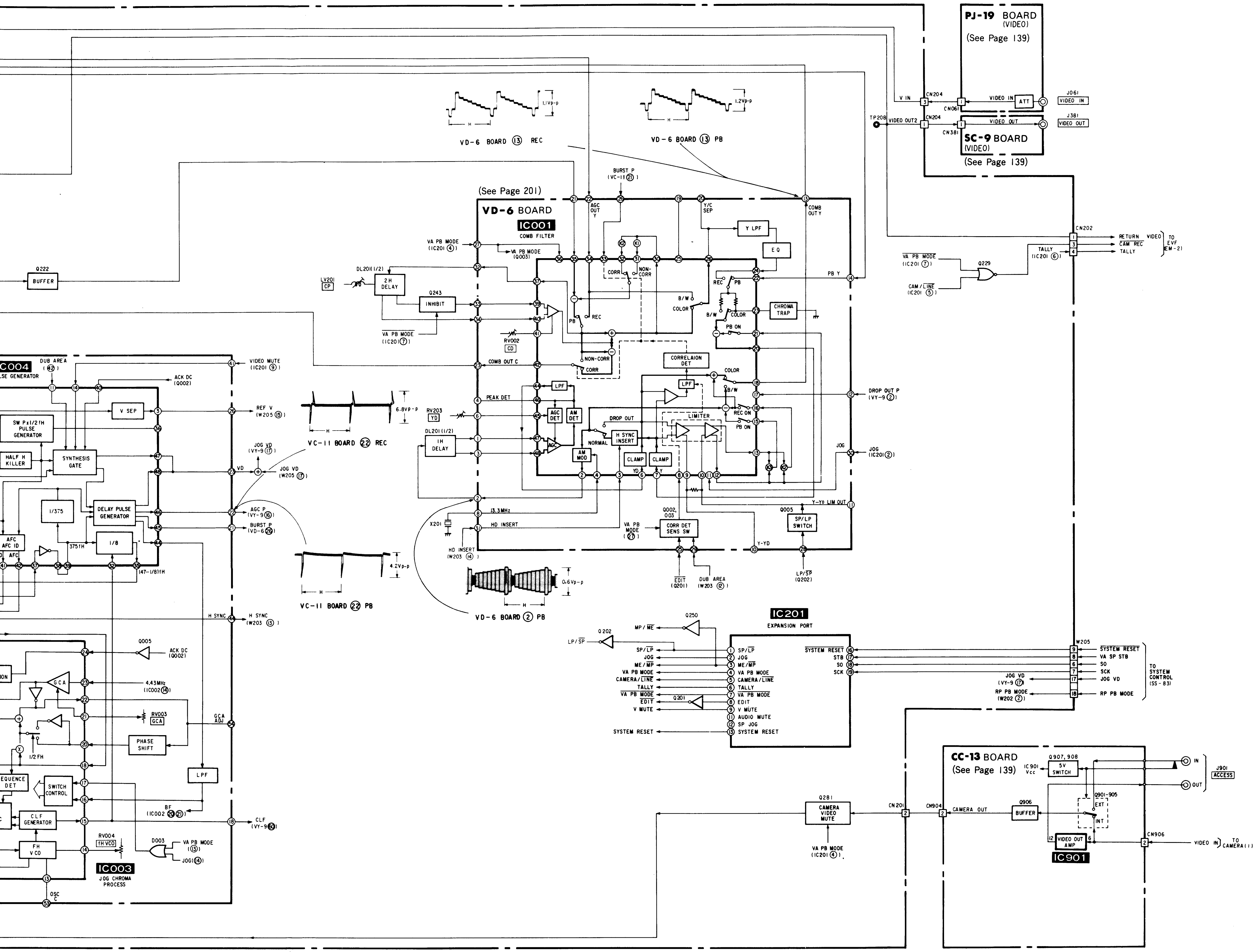
3-6. VIDEO BLOCK DIAGRAM (1)


RP-66 BOARD (See Page 129)
RP-59 BOARD (See Page 199)
DRUM
VIDEO HEAD CH 1'
VIDEO HEAD CH 1
VIDEO HEAD CH 2
FRYING ERASE HEAD
CH 1'(X)
CH 1(X)
CH 2(X)
EF(X)
CN101
CN102
CN103
CN104
CN105
W201
W202
FE ON (W201 ①)
Q101 HEAD SHORT
Q102,103 CH 1' HEAD AMP
Q104-106 CH 1' 2ND AMP
RV101 CH 1' PB EQ
RF OUT CH 1'
RF OUT 1'CH
4.5Vp-p
2 V
RP-59 BOARD ㉒㉗ REC
0.2Vp-p
RP-59 BOARD ⑮ PB
RV 003 CH1 PB EQ
RF CH 1
SL CHECK
RF IN
IC001
REC/PB AMP
DUMPING
CH1(X)
CH2(X)
CH 1 HEAD AMP
CH 1 2ND AMP
CH 2 HEAD AMP.
CH 2 2ND AMP
BUFFER
CH 1
CH2
AMP
6dB ATT
RV004 CH2 PB EQ
H CHG
PB V1 RF
PB PCM RF
H CHG (W201 ⑥)
Q133, 134 PB RF AMP
Q109 BUFFER
RF OUT
RF SW P
REC AREA
PB V1 RF] VIDEO(1) (V1-48)
PB PCM RF] PCM AUDIO (PC-32)
AF REC
AF REC] SYSTEM CONTROL (SS-83)
Q001
PB 5V
RP PB MODE
RP PB MODE (W202 ②)
4Vp-p
RP-59 BOARD ⑥ REC/PB
H CHG
RF SW P] VIDEO(1) (V1-48)
REC AREA] PCM AUDIO (PC-32)
RF OUT CH 2
CH 1 CHECK
CH 2 CHECK
RV001 REC V1
H:0.2usec/div
V:0.2V/div
RP-59 BOARD ④ REC
CH 1 REC AMP
CH 2 REC AMP
V-I CONV
V VOL
PCM VOL
RV002 REC PCM
REC V1 RF
REC PCM RF
TP103
Q123 BUFFER
Q122 Y/C MIX
Q121 C/AFM/ATF MIX
ME / $\overline{MP}$
REC Y RF
REC C RF] VIDEO(1) (V1-48)
REC AFM RF] AFM AUDIO (AU-48)
Q126,127 PCM/ATF MIX
Q120 GAIN SWITCH
ME / $\overline{MP}$ (W202 ⑤)
REC PCM RF] PCM AUDIO (PC-32)
Q125 REC ATF AMP
REC ATF RF] SERVO (V1-48)
Q124 GAIN SWITCH
TP102
Q128,130 OSC
Q132 OSC SWITCH
Q129 ERASE CURRENT SWITCH
RP-59 BOARD ⑭ PB
H
RP-59 BOARD ⑳ REC
FE ON
RP PB MODE] SYSTEM CONTROL (SS-83)
Q107,108 5V SWITCH
CH 1' AMP Vcc
RP 5V

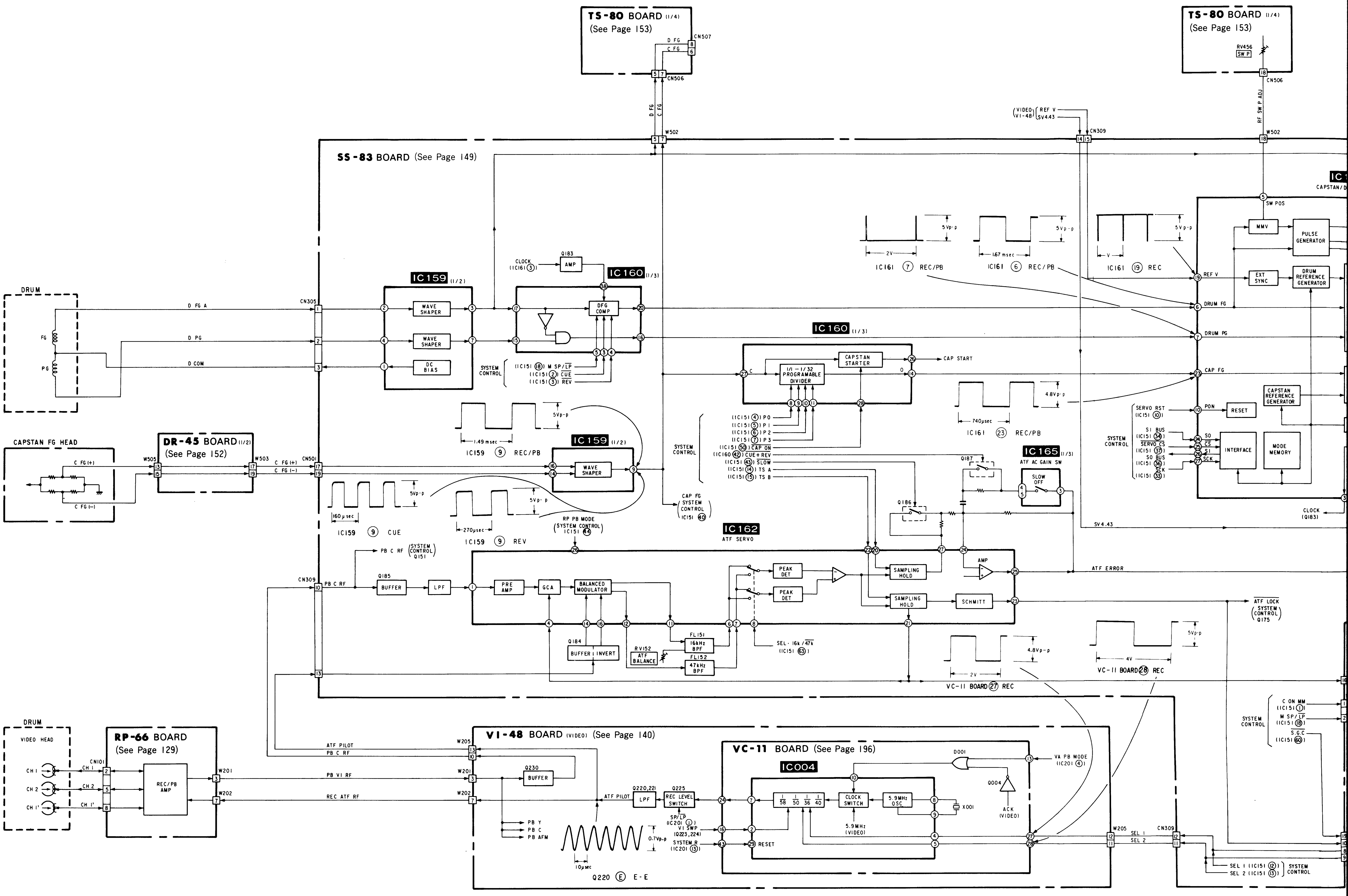
3-7. VIDEO BLOCK DIAGRAM (2)

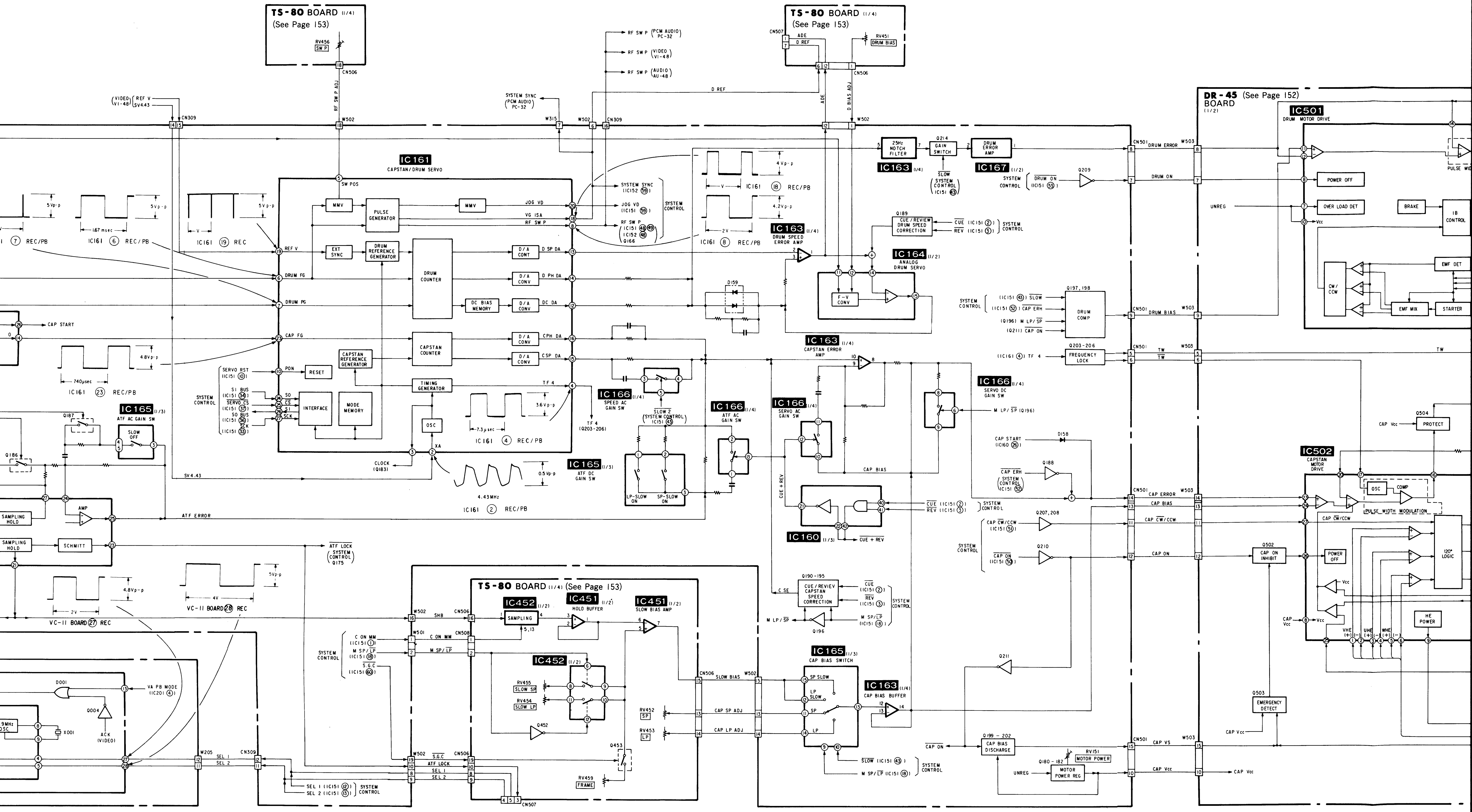

VI-48 BOARD (VIDEO) (See Page 140)
VY-9 BOARD (See Page 193)
VC-11 BOARD (See Page 196)
IC001 Y PROCESS
IC001 CHROMA EMPHASIS
IC002 CHROMA PROCESS
TO VIDEO(2) (RP-66)
REC Y RF
REC C RF
RF SWP
H CHG
RP PB MODE
ME/MP
PB VI RF
TO AFM AUDIO (AU-48)
SP/LP
TO SERVO (SS-83)
PB C RF
SV 4.43
REF V
TO SYSCON (SS-83)
TO PCM AUDIO (PC-32)
HD INSERT
H SYNC
DUB AREA
TO DC/DC CONVERTER
VIDEO 5V
PB 5V
Q203 SHARPNESS ON/OFF SWITCH
Q240,241 5V SWITCH
Q226 BUFFER
Q230 BUFFER
AFM/ATF TRAP
CHROMA TRAP
Q227,228 SOFT LIMITER
LPF
Q249,252 ME/MP SWITCH
Q247,248,245 JOG NOISE SWITCH
Q223,224 VI SWP
Q204,205 5V SWITCH
TP223
TP223 PB
0.7Vp-p
VY-9 BOARD (52) CAMERA 0.56Vp-p
VY-9 BOARD (48) REC 0.52Vp-p
VY-9 BOARD (14) PB 0.22Vp-p
VC-11 BOARD (9) REC 0.9Vp-p
VC-11 BOARD (9) PB 0.5Vp-p
VC-11 BOARD (16) REC/PB 3.2Vp-p
VC-11 BOARD (56) TP220 REC 0.3Vp-p
SHARPNESS
BUFFER
NOISE REDUCE
TIME CONSTANT SWITCH
HARD CLIP
DEVIATION
AC CLIP
CARRIER
SUB DE-EMPH
SUB PRE-EMPH
MAIN PRE-EMPHASIS
HALF H SHIFT
FM MOD
MAIN DE-EMPHASIS
PB LEVEL
CLAMP
AGC DET
AGC AMP
CLAMP VD ADD
VIDEO OUT LEVEL
DOC DET
SYNC SEP
RF AGC
LIMITER
FM DEMOD
Q018 BAND REJECTION FILTER
EQ
QUASI HD INSERT
Q017 CHROMA MUTE
VIDEO OUT 1
VIDEO OUT 2
VI SWP
REC Y RF
S AGC
ACK C
ACK C (PB C)
C SYNC
DRUP OUT P
Q001 BUFFER
FL001 REC C TRAP
BPF
CARRIER BALANCE
CARRIER INVERT
CARRIER CONV
3751H VCO
AFC/APC ID
AFC
CHROMA CONV
BURST EMPH/DE EMPH
APC DET
APC DET SW&AMP
ACK DET
ACK
4.43MHz X'TAL OSC
90° SHIFT
ACC AMP
DC AMP & CH HOLD
PEAK HOLD
CHROMA INVERT
SW
ATT
FL003 REC C BPF
Q003 AMP
CE TRAP
PB CHROMA
REC/PB CHROMA
REC CHROMA
PB C RF
COMB OUT C
TP220
VA PB MODE
JOG
DUB AREA

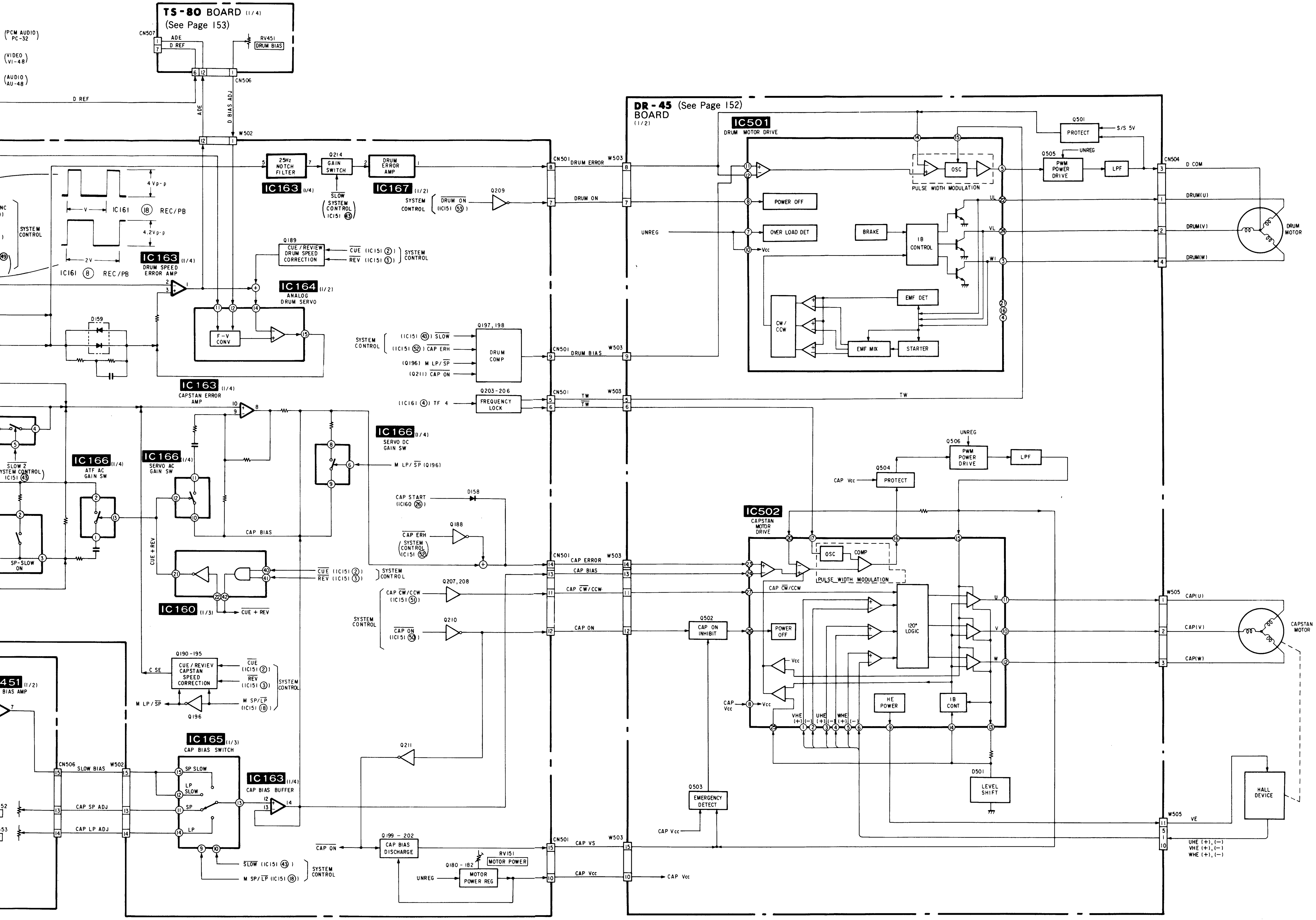

IC202
Q271, 272
NOISE REDUCE
EDIT (Q201)
SP/LP (Q202)
VIDEO IN
AGC OUT Y (REC VIDEO)
MIX Y (REC/PB Y)
PB Y
IC001
Y PROCESS
NOISE REDUCE
BUFFER
TIME CONSTANT SWITCH
HARD CLIP
AC CLIP
CARRIER
DEVIATION
SUB DE-EMPH
SUB PRE-EMPH
MAIN PRE-EMPHASIS
HALF H SHIFT
FM MOD
MAIN DE-EMPHASIS
PB LEVEL
CLAMP
AGC DET
AGC AMP
CAMERA
SYNC SEP
CLAMP PULSE
RF AGC
CLAMP VD ADD
DOC DET
LIMITER
FM DEMOD
VIDEO OUT LEVEL
QUASI HD INSERT
CHROMA MUTE
BAND REJECTION FILTER
EQ
CAM/LINE (IC201 ⑤)
TP206
VY-9 BOARD ㉙ REC
V 0.5V/div, H: 0.1μsec/div
VY-9 BOARD ⑮ REC/PB
2.6Vp-p
VY-9 BOARD ㉗ (TP208) REC
2Vp-p
DRUP OUT P (VD-6 ⑫, Q247)
C SYNC (VC-11 ㉕)
AC CLIP
VI SW P
REC Y RF
S AGC
VIDEO OUT 1
VIDEO OUT 2
COMB IN C (PB C)
COMB OUT C (REC/PB C)
BUFFER
Q222
ACK C (PB C)
ACK C
FL201 3.7MHz BPF
FL202 5.17MHz BPF
IC004
AFC, PULSE GENERATOR
DUB AREA
SW P±1/2fH PULSE GENERATOR
HALF H KILLER
SYNTHESIS GATE
V SEP
1/375
DELAY PULSE GENERATOR
AFC AFC ID
1/8
375fH
147-1/8fH
VIDEO MUTE (IC201 ⑨)
REF V (W205 ⑮)
JOG VD (VY-9 ⑰)
JOG VD (W205 ⑰)
AGC P (VY-9 ⑯)
BURST P (VD-6 ㉙)
H SYNC (W203 ⑬)
C SYNC (VY-9 ⑮)
SYSTEM R (IC201 ⑬)
VA PB MODE (⑬)
VC-11 BOARD ㉒ REC
6.8Vp-p
VC-11 BOARD ㉒ PB
4.2Vp-p
IC002
CHROMA PROCESS
CARRIER BALANCE
CARRIER INVERT
CARRIER CONV
375fH VCO
AFC/APC ID
AFC
BUFFER
CHROMA CONV
BURST EMPH/DE EMPH
APC DET
APC DET SW&AMP
ACK DET
ACK
4.43MHz X'TAL OSC
90° SHIFT
ACC AMP
DC AMP & CH HOLD
PEAK HOLD
SW
CHROMA INVERT
APC CORRECT (IC002 ㉜)
BF (IC003 ⑯)
CV001 FSC
X001
4.43MHz (IC003 ㉓)
0.52Vp-p
4.43MHz
VC-11 BOARD ㊺ REC/PB
ACK DC
LPF
COMB IN C
BPF
FL002
APC CORRECT (IC003 ②)
CAR CONV
VCO ADJ
RV002 VCO
RV001
5.17MHz
4.43MHz
732kHz
REC C TRAP
BUFFER
Q001
FL001
REC C RF
0.3Vp-p
VC-11 BOARD TP220 REC
PB CHROMA
REC/PB CHROMA
VA PB MODE (⑬)
ATT
FL003 REC C BPF
Q003
LPF
AMP
FL003 OUT
ACC
C EMP
TRAP CHECK
VA PB MODE (IC201 ④)
VI SWP (Q223, 224)
JOG (IC201 ②)
DUB AREA (W203 ②)
SV 4.43 (W205 ⑭)
CAMERA IN
IC003
JOG CHROMA PROCESS
6dB
APC CORRECTION
GCA
MAIN SWITCH
QUASI BURST
PHASE SHIFT
BURST ID DET
SEQUENCE DET
SWITCH CONTROL
IIL LOGIC
CLF GENERATOR
1/2 FH
LPF
FH VCO
SHAPER
D002
VCO H IN
VCO 5fH
OSC C
Q005
ACK DC (Q002)
4.43MHz (IC002 ⑭)
RV003 GCA
GCA ADJ
BF (IC002 ⑳㉑)
CLF (VY-9 ㉞)
RV004 fH VCO
D003
VA PB MODE (⑬)
JOG (⑭)
VD-6 BOARD ⑬ REC
1.1Vp-p
VD-6 BOARD ⑬ PB
1.2Vp-p
TP208
(See Page 201)
VD-6 BOARD
IC001
COMB FILTER
BURST P (VC-11 ㉑)
AGC OUT Y
Y/C SEP
COMB OUT Y
Y LPF
EQ
VA PB MODE (IC201 ④)
VA PB MODE (Q003)
DL201(1/2)
2H DELAY
Q243
INHIBIT
LV201 CP
VA PB MODE (IC201 ⑦)
RV002 CD
CORR
NON-CORR
B/W
COLOR
CHROMA TRAP
PB ON
CORRELAION DET
COMB OUT C
PEAK DET
LPF
AGC DET
AM DET
LIMITER
DROP OUT
NORMAL
H SYNC INSERT
REC ON
PB ON
AM MOD
CLAMP
RV203 YD
DL201(1/2)
1H DELAY
13.3MHz
HD INSERT
X201
HD INSERT (W203 ⑭)
Q002, 003
CORR DET SENS SW
VA PB MODE (⑦)
EDIT (Q201)
DUB AREA (W203 ②)
Q005
SP/LP SWITCH
LP/SP (Q202)
Y-YD LIM OUT
Y-YD
PB Y
DROP OUT P (VY-9 ②)
JOG (IC201 ②)
VD-6 BOARD ② PB
0.6Vp-p
IC201
EXPANSION PORT
Q250
Q202
MP/ME
LP/SP
SP/LP
JOG
ME/MP
VA PB MODE
CAMERA/LINE
TALLY
VA PB MODE
EDIT
V MUTE
SYSTEM RESET
Q201
① SP/LP
② JOG
③ ME/MP
④ VA PB MODE
⑤ CAMERA/LINE
⑥ TALLY
⑦ VA PB MODE
⑧ EDIT
⑨ V MUTE
⑩ AUDIO MUTE
⑫ SP JOG
⑬ SYSTEM RESET
SYSTEM RESET ⑯
STB ⑰
SO ⑱
SCK ⑲
Q281
CAMERA VIDEO MUTE
VA PB MODE (IC201 ④)
CN201


PJ-19 BOARD (VIDEO)
(See Page 139)
SC-9 BOARD (VIDEO)
(See Page 139)
VIDEO IN
ATT
J061 VIDEO IN
VIDEO OUT
J381 VIDEO OUT
CN204
CN061
CN381
V IN
VIDEO OUT2
TP208
VD-6 BOARD ⑬ REC
VD-6 BOARD ⑬ PB
1.1Vp-p
1.2Vp-p
H
(See Page 201)
VD-6 BOARD
IC001
COMB FILTER
BURST P (VC-11 ㉒)
AGC OUT Y
Y/C SEP
COMB OUT Y
Y LPF
EQ
VA PB MODE (IC201 ④)
VA PB MODE (Q003)
CORR
NON-CORR
REC
PB
B/W
COLOR
CHROMA TRAP
PB ON
PB Y
DL201(1/2)
2H DELAY
Q243
INHIBIT
LV201 CP
VA PB MODE (IC201 ⑦)
RV002 CD
COMB OUT C
CORRELAION DET
LPF
PEAK DET
AGC DET
AM DET
AGC
DROP OUT
NORMAL
H SYNC INSERT
LIMITER
REC ON
AM MOD
CLAMP
YD
Y
RV203 YD
DL201(1/2)
1H DELAY
DROP OUT P (VY-9 ②)
JOG
JOG (IC201 ②)
13.3MHz
HD INSERT
X201
HD INSERT (W203 ⑭)
VA PB MODE (㉗)
Q002, 003
CORR DET SENS SW
Q005
SP/LP SWITCH
Y-YD LIM OUT
Y-YD
EDIT (Q201)
DUB AREA (W203 ⑫)
LP/SP (Q202)
VC-11 BOARD ㉒ REC
6.8Vp-p
VC-11 BOARD ㉒ PB
4.2Vp-p
VD-6 BOARD ② PB
0.6Vp-p
Q222
BUFFER
IC004
DUB AREA (㊷)
PULSE GENERATOR
VIDEO MUTE (IC201 ⑨)
ACK DC (Q002)
V SEP
REF V (W205 ⑮)
SW P±1/2H PULSE GENERATOR
HALF H KILLER
SYNTHESIS GATE
JOG VD (VY-9 ⑰)
VD
JOG VD (W205 ⑰)
1/375
DELAY PULSE GENERATOR
AGC P (VY-9 ⑥)
BURST P (VD-6 ㉒)
AFC
AFC ID
375fH
1/8
(47-1/8)fH
H SYNC
H SYNC (W203 ⑬)
Q005
ACK DC (Q002)
GCA
4.43MHz (IC002 ⑭)
RV003 GCA
GCA ADJ
PHASE SHIFT
1/2 FH
SEQUENCE DET
SWITCH CONTROL
LPF
BF (IC002 ㉓㉑)
CLF GENERATOR
CLF (VY-9 ③)
FH VCO
RV004 fH VCO
D003
VA PB MODE (⑬)
JOG (⑭)
IC003
JOG CHROMA PROCESS
OSC C
CN202
RETURN VIDEO
CAM REC
TALLY
TO EVF (EM-2)
TALLY (IC201 ⑥)
VA PB MODE (IC201 ⑦)
Q229
CAM/LINE (IC201 ⑤)
IC201
EXPANSION PORT
Q250
MP/ME
Q202
LP/SP
SP/LP
JOG
ME/MP
VA PB MODE
CAMERA/LINE
TALLY
VA PB MODE
EDIT
V MUTE
Q201
SYSTEM RESET
① SP/LP
② JOG
③ ME/MP
④ VA PB MODE
⑤ CAMERA/LINE
⑥ TALLY
⑦ VA PB MODE
⑧ EDIT
⑨ V MUTE
⑪ AUDIO MUTE
⑫ SP JOG
⑬ SYSTEM RESET
SYSTEM RESET ⑯
STB ⑰
SO ⑱
SCK ⑲
W205
SYSTEM RESET
VA SP STB
SO
SCK
JOG VD
RP PB MODE
TO SYSTEM CONTROL (SS-83)
JOG VD (VY-9 ⑰)
RP PB MODE (W202 ②)
CC-13 BOARD
(See Page 139)
IC901 Vcc
Q907, 908
5V SWITCH
IN
OUT
J901 ACCESS
Q901-905
EXT
INT
Q906
BUFFER
VIDEO OUT AMP
IC901
CN904
CAMERA OUT
CN906
VIDEO IN
TO CAMERA(1)
Q281
CAMERA VIDEO MUTE
VA PB MODE (IC201 ④)
CN201

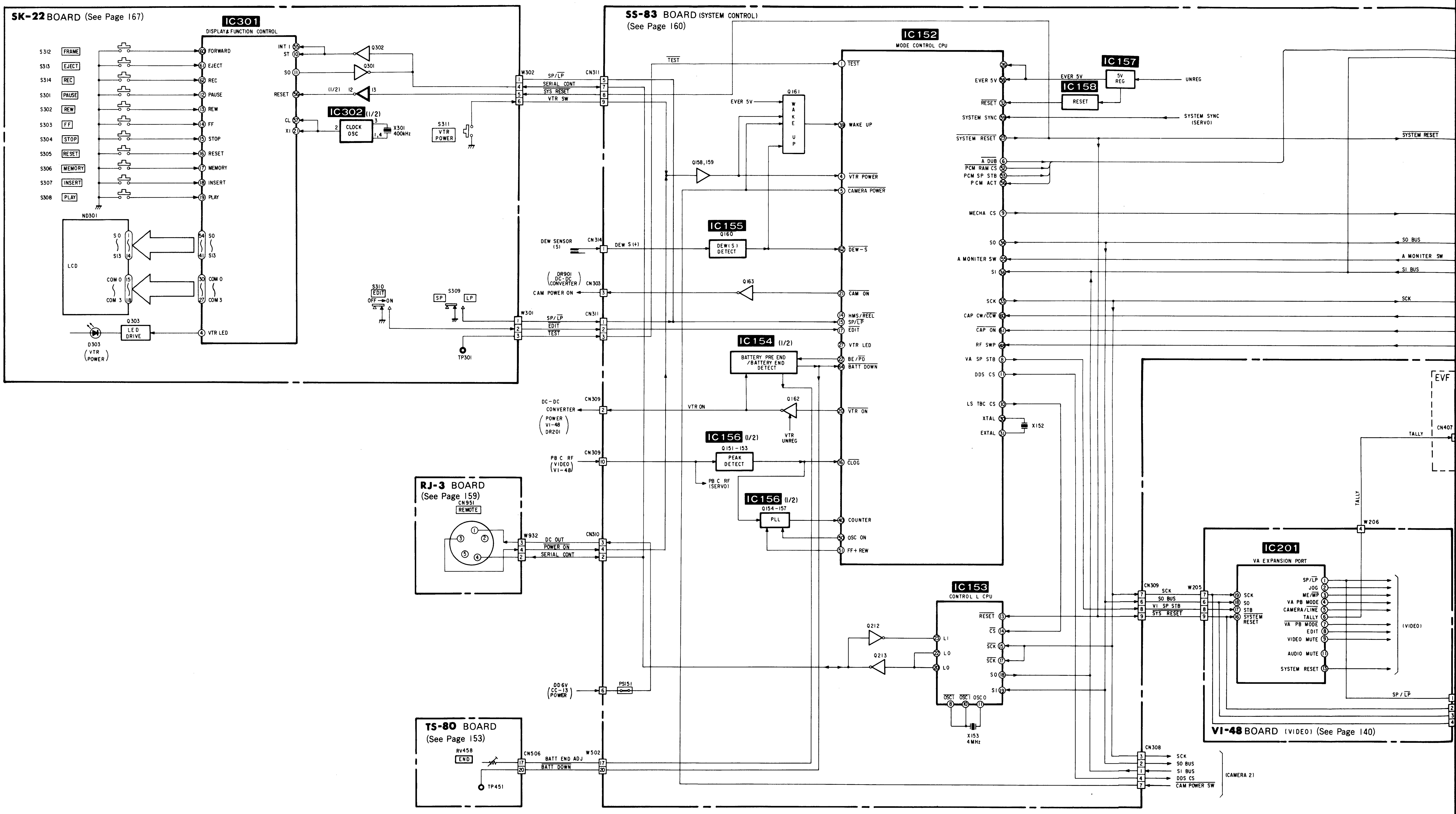
3-8. SERVO BLOCK DIAGRAM

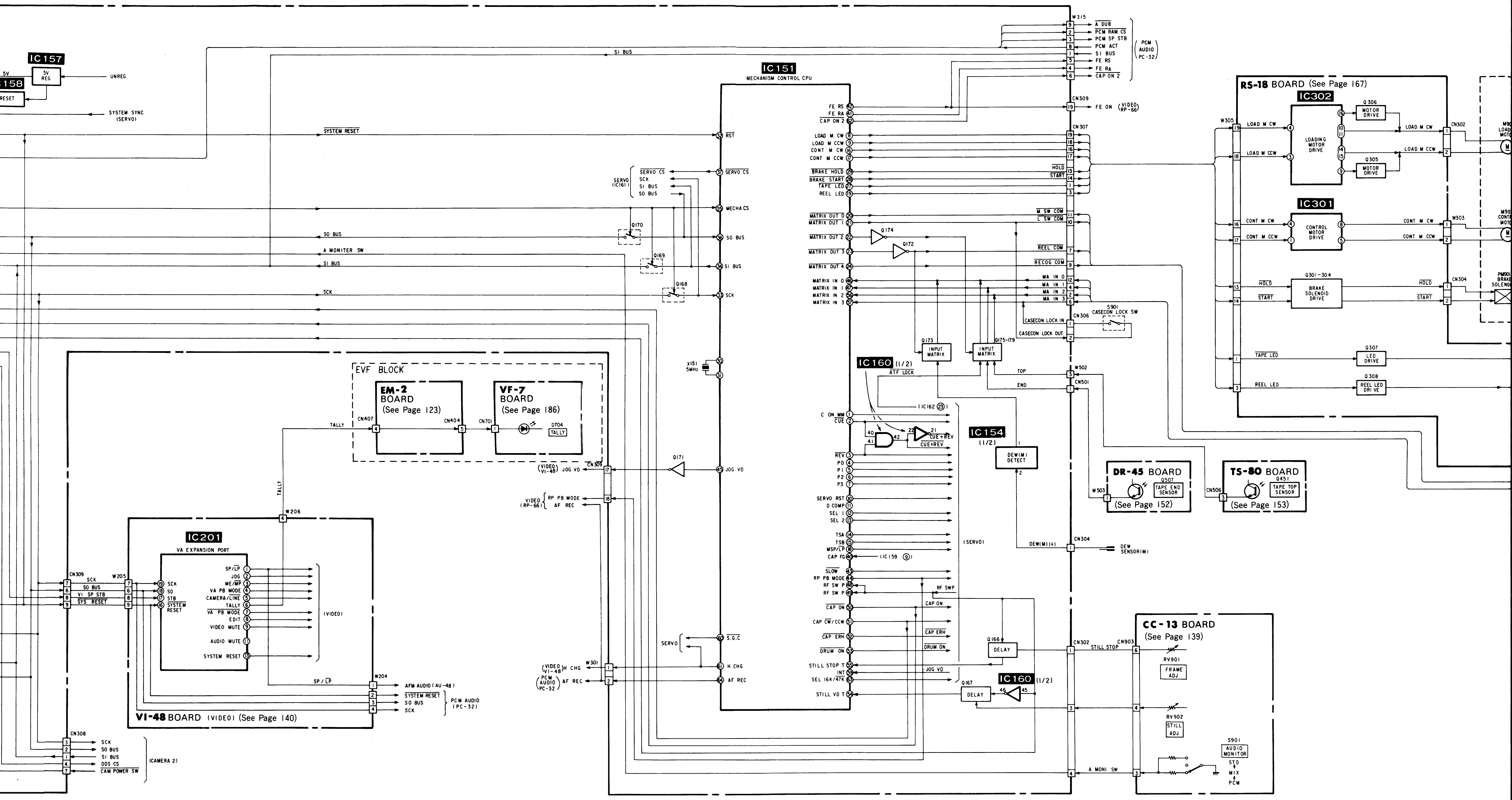

TS-80 BOARD (1/4)
(See Page 153)
D FG
C FG
CN507
CN506
TS-80 BOARD (1/4)
(See Page 153)
RV456
SW P
RF SW P ADJ
(VIDEO VI-48) REF V
SV4.43
CN309
W502
SS-83 BOARD (See Page 149)
DRUM
FG
PG
D FG A
D PG
D COM
CN305
IC159 (1/2)
WAVE SHAPER
WAVE SHAPER
DC BIAS
CLOCK (IC161 ③)
Q183
AMP
IC160 (1/3)
DFG COMP
SYSTEM CONTROL
(IC151 ⑱) M SP/LP
(IC151 ②) CUE
(IC151 ③) REV
IC161 ⑦ REC/PB
IC161 ⑥ REC/PB
IC161 ⑲ REC
5Vp-p
2V
1.67 msec
V
IC160 (1/3)
1/1 — 1/32 PROGRAMABLE DIVIDER
CAPSTAN STARTER
CAP START
(IC151 ④) P0
(IC151 ⑤) P1
(IC151 ⑥) P2
(IC151 ⑦) P3
(IC151 ㊿) CAP ON
(IC160 ㊷) CUE + REV
(IC151 ㊸) SLOW
(IC151 ⑭) TS A
(IC151 ⑮) TS B
SYSTEM CONTROL
4.8Vp-p
740μsec
IC161 ㉓ REC/PB
IC165 (1/3)
ATF AC GAIN SW
Q187
Q186
SLOW OFF
CAPSTAN FG HEAD
C FG (+)
C FG (−)
DR-45 BOARD (1/2)
(See Page 152)
W505
W503
CN501
1.49 msec
IC159 ⑨ REC/PB
IC159 (1/2)
WAVE SHAPER
160μsec
IC159 ⑨ CUE
270μsec
IC159 ⑨ REV
RP PB MODE (SYSTEM CONTROL IC151 ㊹)
CAP FG SYSTEM CONTROL (IC151 ㊵)
IC162
ATF SERVO
PB C RF (SYSTEM CONTROL Q151)
CN309
PB C RF
Q185
BUFFER
LPF
PRE AMP
GCA
BALANCED MODULATOR
PEAK DET
PEAK DET
SAMPLING HOLD
SAMPLING HOLD
AMP
SCHMITT
ATF ERROR
ATF LOCK (SYSTEM CONTROL Q175)
Q184
BUFFER
INVERT
RV152
ATF BALANCE
FL151
16kHz BPF
FL152
47kHz BPF
SEL · 16k/47k (IC151 ⑬)
VC-11 BOARD ㉗ REC
VC-11 BOARD ㉘ REC
4V
IC1
CAPSTAN/D
SW POS
MMV
PULSE GENERATOR
REF V
EXT SYNC
DRUM REFERENCE GENERATOR
DRUM FG
DRUM PG
CAP FG
PON
RESET
CAPSTAN REFERENCE GENERATOR
SERVO RST (IC151 ⑩)
SI BUS (IC151 ㉞)
SERVO CS (IC151 ㊲)
SO BUS (IC151 ㊱)
SCK (IC151 ㉝)
SO
CS
SI
SCK
INTERFACE
MODE MEMORY
SYSTEM CONTROL
CLOCK (Q183)
SV4.43
DRUM
VIDEO HEAD
CH 1
CH 2
CH 1'
CN101
RP-66 BOARD
(See Page 129)
REC/PB AMP
W201
W202
ATF PILOT
PB C RF
PB VI RF
REC ATF RF
VI-48 BOARD (VIDEO) (See Page 140)
W205
Q230
BUFFER
PB Y
PB C
PB AFM
10μsec
0.7Vp-p
Q220 Ⓔ E-E
ATF PILOT
Q220,221
LPF
Q225
REC LEVEL SWITCH
SP/LP (IC201 ①)
VI SWP (Q223,224)
SYSTEM R (IC201 ⑬)
VC-11 BOARD (See Page 196)
IC004
1/58 1/50 1/36 1/40
CLOCK SWITCH
5.9MHz OSC
5.9MHz (VIDEO)
X001
D001
Q004
ACK (VIDEO)
VA PB MODE (IC201 ④)
RESET
W205
SEL 1
SEL 2
CN309
C ON MM (IC151 ①)
M SP/LP (IC151 ⑱)
S.G.C (IC151 ㊵)
SYSTEM CONTROL
SEL 1 (IC151 ⑫)
SEL 2 (IC151 ⑬)
SYSTEM CONTROL

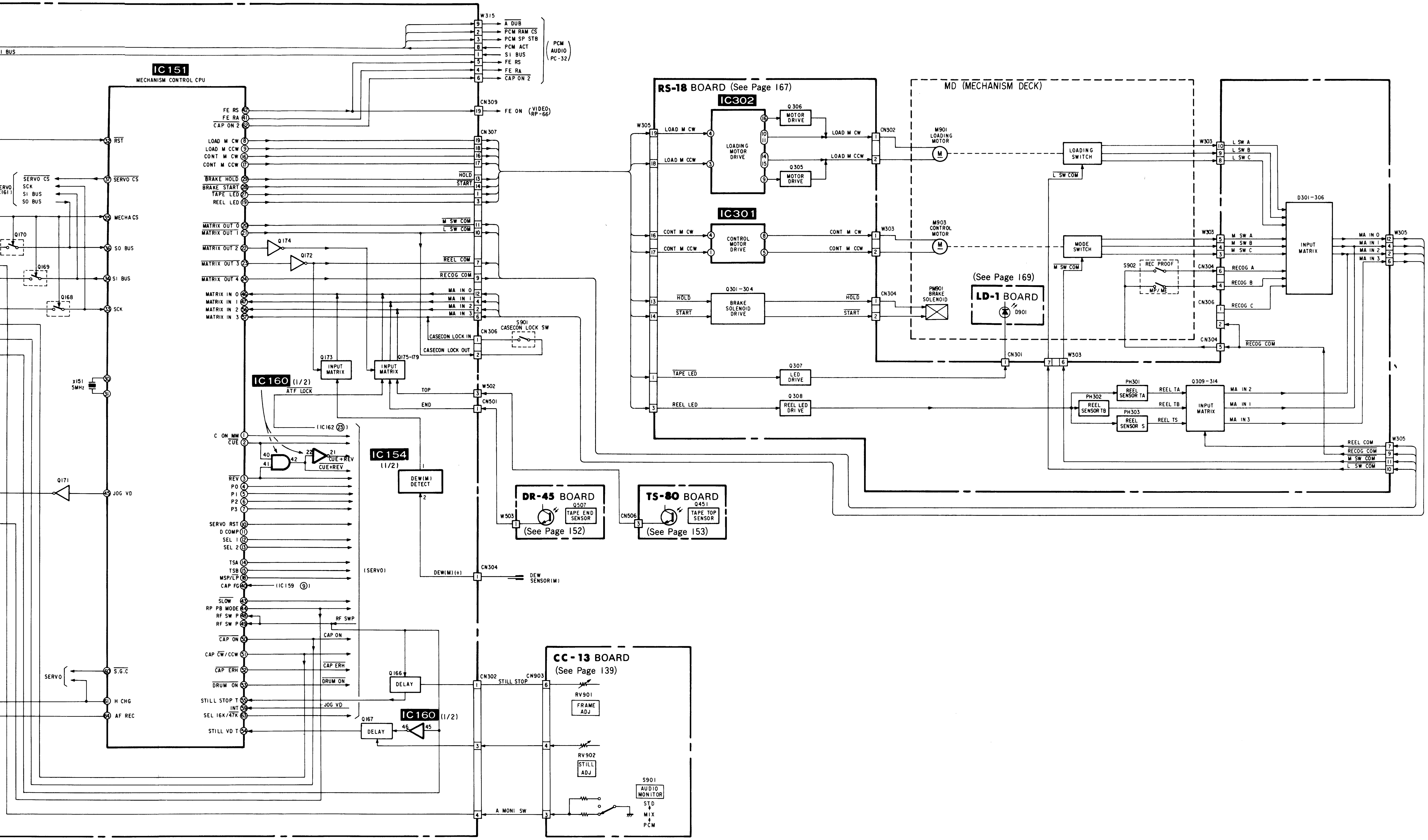

TS-80 BOARD (1/4)
(See Page 153)
RV456 SW P
CN506
RF SW P ADJ
W502
IC161
CAPSTAN/DRUM SERVO
SW POS
MMV
PULSE GENERATOR
JOG VD
VG ISA
RF SW P
EXT SYNC
DRUM REFERENCE GENERATOR
DRUM COUNTER
D/A CONV
D SP DA
D PH DA
DC BIAS MEMORY
DC DA
CAPSTAN COUNTER
CPH DA
CSP DA
CAPSTAN REFERENCE GENERATOR
TIMING GENERATOR
TF 4
RESET
PON
INTERFACE
MODE MEMORY
OSC
XA
CLOCK (Q183)
4.43MHz
IC161 ② REC/PB
IC161 ④ REC/PB
7.3μsec
3.6Vp-p
0.5Vp-p
REF V
DRUM FG
DRUM PG
CAP FG
CAP START
SERVO RST (IC151 ⑩)
SYSTEM CONTROL
SI BUS (IC151 ㉞)
SERVO CS (IC151 ㊲)
SO BUS (IC151 ㊱)
SCK (IC151 ㉝)
SO CS SI SCK
5Vp-p
1.67 msec
IC161 ⑦ REC/PB
IC161 ⑥ REC/PB
IC161 ⑲ REC
4.8Vp-p
740μsec
IC161 ㉓ REC/PB
IC165 (1/3)
ATF AC GAIN SW
SLOW OFF
Q187
Q186
AMP
SAMPLING HOLD
SCHMITT
ATF ERROR
ATF LOCK (SYSTEM CONTROL) Q175
SV4.43
(VIDEO VI-48) REF V SV4.43
CN309
2V
VC-II BOARD ㉗ REC
4V
VC-II BOARD ㉘ REC
D001
VA PB MODE (IC201 ④)
Q004
ACK (VIDEO)
X001
4.9MHz OSC
W205
SEL 1
SEL 2
SEL 1 (IC151 ⑫)
SEL 2 (IC151 ⑬)
SYSTEM CONTROL
SYSTEM SYNC (PCM AUDIO PC-32)
W315
RF SW P (PCM AUDIO PC-32)
RF SW P (VIDEO VI-48)
RF SW P (AUDIO AU-48)
D REF
SYSTEM SYNC (IC152 ㊾)
JOG VD (IC151 ㊾)
RF SW P (IC151 ㊽㊾) (IC152 ㊽) Q166
SYSTEM CONTROL
4Vp-p
IC161 ⑱ REC/PB
4.2Vp-p
IC161 ⑧ REC/PB
TS-80 BOARD (1/4)
(See Page 153)
CN507
ADE
D REF
RV451 DRUM BIAS
D BIAS ADJ
25Hz NOTCH FILTER
IC163 (1/4)
Q214 GAIN SWITCH
SLOW (SYSTEM CONTROL) (IC151 ㊸)
DRUM ERROR AMP
IC167 (1/2)
SYSTEM CONTROL
DRUM ON (IC151 ㊸)
Q209
Q189
CUE/REVIEW DRUM SPEED CORRECTION
CUE (IC151 ②)
REV (IC151 ③)
IC163 (1/4)
DRUM SPEED ERROR AMP
IC164 (1/2)
ANALOG DRUM SERVO
F-V CONV
D159
IC166 (1/4)
SPEED AC GAIN SW
SLOW 2 (SYSTEM CONTROL) (IC151 ㊸)
TF 4 (Q203-206)
LP-SLOW ON
SP-SLOW ON
IC165 (1/3)
ATF DC GAIN SW
IC166 (1/4)
ATF AC GAIN SW
IC163 (1/4)
CAPSTAN ERROR AMP
IC166 (1/4)
SERVO AC GAIN SW
IC166 (1/4)
SERVO DC GAIN SW
M LP/SP (Q196)
CUE + REV
IC160 (1/3)
CUE (IC151 ②)
REV (IC151 ③)
SYSTEM CONTROL
CAP BIAS
Q197, 198
DRUM COMP
(IC151 ㊸) SLOW
(IC151 ㉜) CAP ERH
(Q196) M LP/SP
(Q211) CAP ON
Q203-206
FREQUENCY LOCK
(IC161 ④) TF 4
CAP START (IC160 ㉖)
D158
Q188
CAP ERH (SYSTEM CONTROL) (IC151 ㉜)
Q207, 208
CAP CW/CCW (IC151 ㊿)
Q210
CAP ON (IC151 ㊿)
Q190-195
CUE/REVIEW CAPSTAN SPEED CORRECTION
C SE
M LP/SP
Q196
M SP/LP (IC151 ⑱)
Q211
IC165 (1/3)
CAP BIAS SWITCH
SP SLOW
LP SLOW
SP
LP
IC163 (1/4)
CAP BIAS BUFFER
SLOW (IC151 ㊸)
M SP/LP (IC151 ⑱)
Q199-202
CAP BIAS DISCHARGE
CAP ON
Q180-182
RV151 MOTOR POWER
UNREG
MOTOR POWER REG
TS-80 BOARD (1/4) (See Page 153)
IC452 (1/2)
SAMPLING
IC451 (1/2)
HOLD BUFFER
IC451 (1/2)
SLOW BIAS AMP
SHB
C ON MM (IC151 ①)
M SP/LP (IC151 ⑱)
S.G.C (IC151 ㊿)
W501
CN508
IC452 (1/2)
RV455 SLOW SP
RV454 SLOW LP
Q452
Q453
RV459 FRAME
RV452 SP
RV453 LP
SLOW BIAS
CAP SP ADJ
CAP LP ADJ
S.G.C
ATF LOCK
SEL 1
SEL 2
CN507
CN501
DRUM ERROR
W503
DRUM ON
DRUM BIAS
TW
CAP ERROR
CAP BIAS
CAP CW/CCW
CAP ON
CAP VS
CAP Vcc
DR-45 (See Page 152)
BOARD (1/2)
IC501
DRUM MOTOR DRIVE
PULSE WID
POWER OFF
UNREG
OVER LOAD DET
BRAKE
IB CONTROL
CW/CCW
EMF DET
EMF MIX
STARTER
Q504
CAP Vcc
PROTECT
IC502
CAPSTAN MOTOR DRIVE
OSC
COMP
PULSE WIDTH MODULATION
CAP CW/CCW
Q502
CAP ON INHIBIT
POWER OFF
120° LOGIC
Vcc
CAP Vcc
HE POWER
VHE (+) (-)
UHE (+) (-)
WHE (+) (-)
Q503
EMERGENCY DETECT
CAP Vcc


TS-80 BOARD (1/4)
(See Page 153)
CN507
ADE
D REF
RV451
DRUM BIAS
CN506
D BIAS ADJ
W502
(PCM AUDIO PC-32)
(VIDEO VI-48)
(AUDIO AU-48)
SYSTEM CONTROL
25Hz NOTCH FILTER
IC163 (1/4)
Q214
GAIN SWITCH
SLOW
(SYSTEM CONTROL IC151 43)
DRUM ERROR AMP
IC167 (1/2)
SYSTEM CONTROL
DRUM ON (IC151 53)
Q209
4Vp-p
V
IC161 18 REC/PB
4.2Vp-p
2V
IC161 8 REC/PB
IC163 (1/4)
DRUM SPEED ERROR AMP
Q189
CUE/REVIEW DRUM SPEED CORRECTION
CUE (IC151 2)
REV (IC151 3)
SYSTEM CONTROL
IC164 (1/2)
ANALOG DRUM SERVO
F-V CONV
D159
Q197, 198
DRUM COMP
(IC151 43) SLOW
(IC151 52) CAP ERH
(Q196) M LP/SP
(Q211) CAP ON
Q203-206
FREQUENCY LOCK
(IC161 4) TF 4
IC163 (1/4)
CAPSTAN ERROR AMP
IC166 (1/4)
SERVO DC GAIN SW
M LP/SP (Q196)
SLOW 2
SYSTEM CONTROL IC151 43
IC166 (1/4)
ATF AC GAIN SW
IC166 (1/4)
SERVO AC GAIN SW
SP-SLOW ON
CAP BIAS
CUE + REV
IC160 (1/3)
CUE + REV
CAP START (IC160 26)
D158
CAP ERH
(SYSTEM CONTROL IC151 52)
Q188
Q207, 208
CAP CW/CCW (IC151 51)
Q210
CAP ON (IC151 50)
Q190-195
CUE/REVIEV CAPSTAN SPEED CORRECTION
C SE
CUE (IC151 2)
REV (IC151 3)
M SP/LP (IC151 18)
M LP/SP
Q196
451 (1/2)
BIAS AMP
IC165 (1/3)
CAP BIAS SWITCH
SP SLOW
LP SLOW
SP
LP
IC163 (1/4)
CAP BIAS BUFFER
CN506
SLOW BIAS
W502
CAP SP ADJ
CAP LP ADJ
SLOW (IC151 43)
M SP/LP (IC151 18)
Q211
CAP ON
Q199-202
CAP BIAS DISCHARGE
RV151
MOTOR POWER
Q180-182
UNREG
MOTOR POWER REG
CN501
DRUM ERROR
DRUM ON
DRUM BIAS
TW
CAP ERROR
CAP BIAS
CAP CW/CCW
CAP ON
CAP VS
CAP Vcc
W503
DR-45 (See Page 152)
BOARD (1/2)
IC501
DRUM MOTOR DRIVE
POWER OFF
UNREG
OVER LOAD DET
Vcc
BRAKE
IB CONTROL
PULSE WIDTH MODULATION
OSC
UL
VL
WI
EMF DET
CW/CCW
EMF MIX
STARTER
Q501
PROTECT
S/S 5V
Q505
UNREG
PWM POWER DRIVE
LPF
CN504
D COM
DRUM(U)
DRUM(V)
DRUM(W)
DRUM MOTOR
UNREG
Q506
PWM POWER DRIVE
LPF
Q504
CAP Vcc
PROTECT
IC502
CAPSTAN MOTOR DRIVE
OSC
COMP
PULSE WIDTH MODULATION
CAP CW/CCW
Q502
CAP ON INHIBIT
POWER OFF
120° LOGIC
U
V
W
CAP Vcc
Vcc
HE POWER
IB CONT
VHE (+) (−)
UHE (+) (−)
WHE (+) (−)
D501
LEVEL SHIFT
Q503
EMERGENCY DETECT
CAP Vcc
W505
CAP(U)
CAP(V)
CAP(W)
CAPSTAN MOTOR
HALL DEVICE
VE
UHE (+), (−)
VHE (+), (−)
WHE (+), (−)

3-9. SYSTEM CONTROL BLOCK DIAGRAM


SK-22 BOARD (See Page 167)
IC301
DISPLAY & FUNCTION CONTROL
S312 FRAME
S313 EJECT
S314 REC
S301 PAUSE
S302 REW
S303 FF
S304 STOP
S305 RESET
S306 MEMORY
S307 INSERT
S308 PLAY
FORWARD
EJECT
REC
PAUSE
REW
FF
STOP
RESET
MEMORY
INSERT
PLAY
INT 1
ST
SO
RESET
CL
XI
Q302
Q301
IC302 (1/2)
CLOCK OSC
X301 400kHz
S311 VTR POWER
ND301
LCD
S0 ~ S13
COM 0 ~ COM 3
Q303 LED DRIVE
D303 (VTR POWER)
VTR LED
S310 EDIT OFF ON
S309 SP LP
TP301
W302
W301
SP/LP
SERIAL CONT
SYS RESET
VTR SW
EDIT
TEST
CN311
SS-83 BOARD (SYSTEM CONTROL) (See Page 160)
IC152
MODE CONTROL CPU
TEST
EVER 5V
Q161 WAKE UP
WAKE UP
Q158, 159
VTR POWER
CAMERA POWER
DEW SENSOR (S)
CN314
DEW S (+)
IC155
Q160 DEW(S) DETECT
DEW-S
(DR901 DC-DC CONVERTER)
CN303
CAM POWER ON
Q163
CAM ON
HMS/REEL
SP/LP
EDIT
VTR LED
IC154 (1/2)
BATTERY PRE END /BATTERY END DETECT
BE/PD
BATT DOWN
DC-DC CONVERTER (POWER VI-48 DR201)
CN309
VTR ON
Q162
VTR UNREG
IC156 (1/2)
Q151-153 PEAK DETECT
PB C RF (VIDEO) (VI-48)
PB C RF (SERVO)
CLOG
IC156 (1/2)
Q154-157 PLL
COUNTER
OSC ON
FF+REW
RJ-3 BOARD (See Page 159)
CN951 REMOTE
W932
CN310
DC OUT
POWER ON
SERIAL CONT
DD 6V (CC-13 POWER)
PS151
TS-80 BOARD (See Page 153)
RV458 END
TP451
CN506
W502
BATT END ADJ
BATT DOWN
IC157 5V REG
UNREG
IC158 RESET
RESET
SYSTEM SYNC
SYSTEM SYNC (SERVO)
SYSTEM RESET
A DUB
PCM RAM CS
PCM SP STB
PCM ACT
MECHA CS
SO
A MONITER SW
SI
SCK
CAP CW/CCW
CAP ON
RF SWP
VA SP STB
DDS CS
LS TBC CS
XTAL
EXTAL
X152
SO BUS
A MONITER SW
SI BUS
SCK
EVF
CN407
TALLY
W206
IC153
CONTROL L CPU
Q212
Q213
LI
LO
RESET
CS
SCK
SO
SI
OSCI OSCI OSC O
X153 4MHz
CN309
W205
SCK
SO BUS
VI SP STB
SYS RESET
IC201
VA EXPANSION PORT
SCK
SO
STB
SYSTEM RESET
SP/LP
JOG
ME/MP
VA PB MODE
CAMERA/LINE
TALLY
VA PB MODE
EDIT
VIDEO MUTE
AUDIO MUTE
SYSTEM RESET
(VIDEO)
VI-48 BOARD (VIDEO) (See Page 140)
CN308
SCK
SO BUS
SI BUS
DDS CS
CAM POWER SW
(CAMERA 2)


IC157
5V REG
UNREG
158
RESET
SYSTEM SYNC (SERVO)
SI BUS
SYSTEM RESET
SO BUS
A MONITER SW
SCK
IC151
MECHANISM CONTROL CPU
FE RS
FE RA
CAP ON 2
RST
LOAD M CW
LOAD M CCW
CONT M CW
CONT M CCW
BRAKE HOLD
BRAKE START
TAPE LED
REEL LED
SERVO CS
SERVO (IC161)
MECHA CS
MATRIX OUT 0
MATRIX OUT 1
MATRIX OUT 2
MATRIX OUT 3
MATRIX OUT 4
MATRIX IN 0
MATRIX IN 1
MATRIX IN 2
MATRIX IN 3
Q170
Q169
Q168
Q174
Q172
X151 5MHz
W315
A DUB
PCM RAM CS
PCM SP STB
PCM ACT
SI BUS
FE RS
FE RA
CAP ON 2
(PCM AUDIO PC-32)
CN309
FE ON (VIDEO RP-66)
CN307
HOLD
START
M SW COM
L SW COM
REEL COM
RECOG COM
MA IN 0
MA IN 1
MA IN 2
MA IN 3
CN306
S901 CASECON LOCK SW
CASECON LOCK IN
CASECON LOCK OUT
Q173 INPUT MATRIX
Q175-179 INPUT MATRIX
IC160 (1/2)
ATF LOCK
(IC162 ㉓)
C ON MM
CUE
REV
P0
P1
P2
P3
CUE+REV
IC154 (1/2)
DEW(M) DETECT
W502
TOP
CN501
END
SERVO RST
D COMP
SEL 1
SEL 2
TSA
TSB
MSP/LP
CAP FG
(IC159 ⑨)
(SERVO)
SLOW
RP PB MODE
RF SW P
RF SWP
CAP ON
CAP CW/CCW
CAP ERH
DRUM ON
STILL STOP T
INT
SEL 16K/47K
STILL VD T
JOG VD
S.G.C
H CHG
AF REC
Q166 DELAY
Q167 DELAY
IC160 (1/2)
CN304
DEW(M)(+)
DEW SENSOR(M)
CN302
STILL STOP
CN903
CC-13 BOARD (See Page 139)
RV901 FRAME ADJ
RV902 STILL ADJ
S901 AUDIO MONITOR STD MIX PCM
A MONI SW
RS-18 BOARD (See Page 167)
IC302
W305
LOADING MOTOR DRIVE
Q306 MOTOR DRIVE
Q305 MOTOR DRIVE
CN302
M901 LOADING MOTOR
IC301
CONTROL MOTOR DRIVE
W303
M902 CONT MOTOR
Q301-304 BRAKE SOLENOID DRIVE
CN304
PM901 BRAKE SOLENOID
Q307 LED DRIVE
Q308 REEL LED DRIVE
DR-45 BOARD
W503
Q507 TAPE END SENSOR
(See Page 152)
TS-80 BOARD
CN506
Q451 TAPE TOP SENSOR
(See Page 153)
EVF BLOCK
EM-2 BOARD (See Page 123)
CN407
CN404
VF-7 BOARD (See Page 186)
CN701
D704 TALLY
TALLY
Q171
CN305
(VIDEO VI-48) JOG VD
VIDEO (RP-66) RP PB MODE AF REC
SERVO
W301
(VIDEO VI-48) H CHG
(PCM AUDIO PC-32) AF REC
W206
IC201
VA EXPANSION PORT
SCK
SO
STB
SYSTEM RESET
SP/LP
JOG
ME/MP
VA PB MODE
CAMERA/LINE
TALLY
VA PB MODE
EDIT
VIDEO MUTE
AUDIO MUTE
SYSTEM RESET
(VIDEO)
CN309
W205
SO BUS
VI SP STB
SYS RESET
W204
AFM AUDIO (AU-48)
SYSTEM RESET
SO BUS
SCK
PCM AUDIO (PC-32)
VI-48 BOARD (VIDEO) (See Page 140)
CN308
SCK
SO BUS
SI BUS
DDS CS
CAM POWER SW
(CAMERA 2)


IC151
MECHANISM CONTROL CPU
W315
A DUB
PCM RAM CS
PCM SP STB
PCM ACT
SI BUS
FE RS
FE RA
CAP ON 2
PCM AUDIO PC-32
CN309
FE ON (VIDEO RP-66)
CN307
RST
LOAD M CW
LOAD M CCW
CONT M CW
CONT M CCW
BRAKE HOLD
BRAKE START
TAPE LED
REEL LED
HOLD
START
SERVO CS
SCK
SI BUS
SO BUS
MECHA CS
MATRIX OUT 0
MATRIX OUT 1
MATRIX OUT 2
MATRIX OUT 3
MATRIX OUT 4
M SW COM
L SW COM
REEL COM
RECOG COM
MATRIX IN 0
MATRIX IN 1
MATRIX IN 2
MATRIX IN 3
MA IN 0
MA IN 1
MA IN 2
MA IN 3
Q170
Q169
Q168
Q174
Q172
Q173
INPUT MATRIX
Q175-179
S901
CASECON LOCK SW
CN306
CASECON LOCK IN
CASECON LOCK OUT
X151 5MHz
IC160 (1/2)
ATF LOCK
(IC162 ㉓)
W502
TOP
CN501
END
C ON MM
CUE
CUE+REV
REV
P0
P1
P2
P3
IC154 (1/2)
DEW(M) DETECT
SERVO RST
D COMP
SEL 1
SEL 2
TSA
TSB
MSP/LP
CAP FG
(IC159 ⑨)
(SERVO)
SLOW
RP PB MODE
RF SW P
RF SWP
CAP ON
CAP CW/CCW
CAP ERH
DRUM ON
S.G.C
H CHG
AF REC
STILL STOP T
INT
SEL 16K/47K
STILL VD T
JOG VD
Q171
SERVO
CN304
DEW(M)(+)
DEW SENSOR(M)
Q166
DELAY
Q167
DELAY
IC160 (1/2)
CN302
STILL STOP
CN903
A MONI SW
CC-13 BOARD
(See Page 139)
RV901
FRAME ADJ
RV902
STILL ADJ
S901
AUDIO MONITOR
STD
MIX
PCM
DR-45 BOARD
W503
Q507
TAPE END SENSOR
(See Page 152)
TS-80 BOARD
CN506
Q451
TAPE TOP SENSOR
(See Page 153)
RS-18 BOARD (See Page 167)
IC302
W305
LOADING MOTOR DRIVE
Q306
MOTOR DRIVE
Q305
MOTOR DRIVE
IC301
CONTROL MOTOR DRIVE
CONT M CW
CONT M CCW
W303
Q301-304
BRAKE SOLENOID DRIVE
Q307
LED DRIVE
Q308
REEL LED DRIVE
CN301
MD (MECHANISM DECK)
M901
LOADING MOTOR
M903
CONTROL MOTOR
PM901
BRAKE SOLENOID
(See Page 169)
LD-1 BOARD
D901
LOADING SWITCH
MODE SWITCH
S902
REC PROOF
MP/ME
L SW A
L SW B
L SW C
M SW A
M SW B
M SW C
D301-306
INPUT MATRIX
RECOG A
RECOG B
RECOG C
PH301
REEL SENSOR TA
PH302
REEL SENSOR TB
PH303
REEL SENSOR S
REEL TA
REEL TB
REEL TS
Q309-314
INPUT MATRIX
MA IN 2
MA IN 1
MA IN 3
REEL COM
RECOG COM
M SW COM
L SW COM

3-10. MODE CONTROL CPU (IC151 ON SS-83 BOARD) — PERIPHERAL CIRCUIT INTERFACE

Signal name	I/O	PIN No.	Input/Output level
$\overline{\text{TEST}}$	I	①	Pull-up to "H" level. It becomes TEST mode when "L".
VTR POWER ON	I	④	"L" when the VTR POWER button of the main unit or the remote control unit is pressed.
CAMERA POWER ON	I	⑤	"L" when the CAMERA POWER switch (S706 on CG-2 board) is pressed.
$\overline{\text{A DUB}}$	I	⑥	"L" when the AUDIO DUB switch (S199 on DL-22 board) is pressed.
VA SP STB	O	⑧	A strobe signal ("H" pulse of V cycle) for the EXPANSION PORT (IC201 on VI-48 board) for the video circuit.
MECHA CS	O	⑨	A communication request signal ("H" pulse of V cycle) to the mechanism control CPU (IC151 on SS-83 board).
LS TBC CS	O	⑩	A communication request signal ("L" pulse of V cycle) to the control L CPU (IC153 on SS-83 board).
DDS CS	O	⑪	A communication request signal ("H" pulse of V cycle) to the CAMERA system control CPU (IC701 on FC-15 board).
HMS/$\overline{\text{REEL}}$	I	⑭	Pull-up to the "H" level.
SP/$\overline{\text{LP}}$	I	⑮	"H" when the SP/$\overline{\text{LP}}$ switch (S309 on SK-22 board) is on the SP side.
$\overline{\text{CLOG}}$	I	⑯	During SP mode playback. "H" when the PB RF signal is played back normally.
$\overline{\text{EDIT}}$	I	⑰	"L" when the EDIT switch (S310 on SK-22 board) is ON.
$\overline{\text{VTR ON}}$	O	⑳	When it is at "L", the DC-DC converter (DR201) on VI-46 board is turned ON.
$\overline{\text{CAM ON}}$	O	㉑	When it is at "L", the DC-DC converter on the CAMERA is turned ON.
BE/$\overline{\text{PD}}$	O	㉒	"L" when in the battery pre-end detection and TEST mode.
$\overline{\text{SYSTEM RESET}}$	O	㉓	When the power supply is turned ON, reset the respective CPUs. ("L" when resetting.)
$\overline{\text{RESET}}$	I	㉜	A resetting input when turning the UNREG power supply ON/OFF. ("L" pulse when resetting.)
$\overline{\text{SCK}}$	I/O	㉝	Serial data transfer clock input/output for communication to the respective CPUs. ("L" pulse train of the V cycle.)
SO	O	㉞	Serial data output for communication to the respective CPUs. ("H" pulse train of the V cycle.)
SI	I	㊱	Serial data input for communication to the respective CPUs. ("L" pulse train of the V cycle.)
WAKE UP	I	㊴	A selection pulse (_⊓_) input from the power save mode to the normal mode.
COUNTER	I	㊵	A pulse (‾⊔‾) input for the tape counter when in CUE/REVIEW and FF/REW modes.
RF SW PULSE	I	㊽	A pulse input of 30 Hz duty 50%.
OSC ON	O	㊿	"H" when FF/REW mode and CUE/REV mode.
FF+REW	O	(51)	"H" when FF/REW mode.
$\overline{\text{PCM RAM CS}}$	O	(52)	A communication request signal ("L" pulse of V cycle) to the PCM audio process IC (IC301 on DA-6 board on PC-32 board).
PCM SP CS	O	(53)	A strobe signal ("H" pulse of V cycle) for the EXPANSION PORT (IC016 on PS-32 board) for the PCM audio circuit.
SHUTTER CS	I	(54)	Pull-up to the "H" level.
A MONITOR SW	I	(55)	Input level dependent upon the position of the AUDIO MONITOR switch (S901 on CC-13 board) as follows : PCM ••• 3V, MIX ••• 5V, STD ••• 1V
SYSTEM SYNC	I	(59)	An interruption request signal (V cycle pulse) from the servo IC. (IC161 on SS-83 board)
CAP CW/$\overline{\text{CCW}}$	I	(60)	An input for the tape counter. "H" when the capstan is rotating in FWD direction.
$\overline{\text{CAP ON}}$	I	(61)	An input for the tape counter. "L" when the capstan is rotating.
$\overline{\text{DEW S}}$	I	(62)	"L" when dew (condensation) has formed in the mechanism.
$\overline{\text{BATT DOWN}}$	O	(64)	"L" when the battery is down.

3-11. SYSTEM CONTROL — CAMERA AND VIDEO BLOCK INTERFACE

Signal name	I/O	REF No. PIN No.	STOP	FF	REW	CUE	REVIEW	PB	PB • PAUSE	FRAME	REC
SP/$\overline{\text{LP}}$	O	VI-48 BOARD IC201①	*9	*9	*9	*1	*1	*2	*1	*1	*9
JOG	O	VI-48 BOARD IC201②	L	L	L	H	H	L	H	H	L
ME/$\overline{\text{MP}}$	O	VI-48 BOARD IC201③	*3	*3	*3	*3	*3	*3	*3	*3	*3
VA PB MODE	O	VI-48 BOARD IC201④	L	L	L	H	H	H	H	H	L
CAM/$\overline{\text{LINE}}$	O	VI-48 BOARD IC201⑤	L *4	L *4	L *4	L *4	L *4	L *4	L *4	L *4	L *4
TALLY	O	VI-48 BOARD IC201⑥	L	L	L	L	L	L	L	L	L *4
$\overline{\text{VA PB MODE}}$	O	VI-48 BOARD IC201⑦	H	H	H	L	L	L	L	L	H
$\overline{\text{EDIT}}$	O	VI-48 BOARD IC201⑧	H *5	H *5	H *5	H *5	H *5	H *5	H *5	H *5	H *5
V MUTE	O	VI-48 BOARD IC201⑨	L	L	L	L	L	L	L	L	L
SP JOG	O	VI-48 BOARD IC201⑫	L	L	L	*9	*9	L	*9	*9	L
SYSTEM RESET	O	VI-48 BOARD IC201⑬	L	L	L	L	L	L	L	L	L
FE RS	O	SS-83 BOARD IC151㊷	L	L	L	L	L	L	L	L	H
RP PB MODE	O	SS-83 BOARD IC151㊹	H	H	H	H	H	H	H	H	L
JOG VD	O	SS-83 BOARD IC151㊺	L	L	L	*6	*6	L	*6	*6	L
$\overline{\text{VTR ON}}$	O	SS-83 BOARD IC152⑳	L	L	L	L	L	L	L	L	L
$\overline{\text{CAM ON}}$	O	SS-83 BOARD IC152㉑	H *7	H *7	H *7	H *7	H *7	H *7	H *7	H *7	H *8
H CHG	O	SS-83 BOARD IC151(61)	L	L	L	L	L	L	*10	*10	L
AF REC	O	SS-83 BOARD IC151(64)	L	L	L	L	L	L	L	L	L

*1. Maintains the prior level. "H" when SP mode, "L" when LP mode.
*2. Dependent upon recording mode (SP/LP) of playback tape. "H" when SP mode, "L" when LP mode.
*3. Dependent upon the type of tape. "L" for MP type.
*4. "H" when power supply is ON ($\overline{\text{CAM ON}}$= "L") at the camera section.
*5. "L" when EDIT switch (S310 on SK-22 board) is ON.
*6. Pulse of V cycle (_⊓_).
*7. "L" when VTR+CAMERA mode.(After turning the VTR POWER ON with the VTR POWER switch, operate the camera section by pressing the CAMERA POWER switch.)
*8. "L" when VTR+CAMERA or CAMERA mode.
*9. "H" when SP mode, "L" when LP mode. (Dependent upon the SP/$\overline{\text{LP}}$ switch.)
*10. 25 Hz, 50% duty pulse when SP mode, "L" when LP mode.
*11. 50 Hz "H" pulse.

RFACE

REW	CUE	REVIEW	PB	PB・PAUSE	FRAME	REC	REC・PAUSE	REVERSE	AUDIO DUB	AUDIO DUB PAUSE	INSERT	INSERT PAUSE
*9	*1	*1	*2	*1	*1	*9	*9	*1	*2	*1	*2	*1
L	H	H	L	H	H	L	L	H	L	H	L	L
*3	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3
L	H	H	H	H	H	L	L	H	H	H	L	L
L *4	L *4	L *4	L *4	L *4	L *4	L *4	L *4	L *4	L *4	L *4	L *4	L *4
L	L	L	L	L	L	L *4	L	L	L	L	L *4	L
H	L	L	L	L	L	H	H	L	L	L	H	H
H *5	H *5	H *5	H *5	H *5	H *5	H *5	H *5	H *5	H *5	H *5	H *5	H *5
L	L	L	L	L	L	L	L	L	L	L	L	L
L	*9	*9	L	*9	*9	L	L	*9	L	*9	L	L
L	L	L	L	L	L	L	L	L	L	L	L	L
L	L	L	L	L	L	H	L	L	*11	L	H	L
H	H	H	H	H	H	L	H	H	H	H	L	H
L	*6	*6	L	*6	*6	L	L	*6	L	*6	L	L
L	L	L	L	L	L	L	L	L	L	L	L	L
H *7	H *7	H *7	H *7	H *7	H *7	H *8	H *8	H *7	H *7	H *7	H *7	H *7
L	L	L	L	*10	*10	L	L	L	L	*10	L	L
L	L	L	L	L	L	L	L	L	H	H	L	L

mode.
” when SP mode, “L” when LP mode.

section.

R ON with the VTR POWER switch,
switch.)

e SP/$\overline{\text{LP}}$ switch.)

3-12. SYSTEM CONTROL — MECHANISM BLOCK INTERFACE

Signal name	I/O	REF No. PIN No.	STOP	FF	REW	CUE	REV	PB	PB・PAUSE
MODE SW *1	I	SS-83 BOARD IC151 MATRIX IN (RS-18BOARD W303⑥~③)	3	6	6	1	5	1	1
LOAD SW *2	I	SS-83 BOARD IC151 MATRIX IN (RS-18BOARD W303⑩~⑦)	3	3	3	3	3	3	3
CASSETTE LOCK SW	I	SS-83 BOARD IC151 MATRIX IN (CN306 W303①②)	ON	ON	ON	ON	ON	ON	ON
TAPE TOP	I	SS-83 BOARD IC151 MATRIX IN (W502③)	Normally “L”, “H” at tape top.						
TAPE END	I	SS-83 BOARD IC151 MATRIX IN (CN501①)	Normally “L”, “H” at tape end.						
$\overline{\text{DEW (M)}}$	I	SS-83 BOARD IC151 MATRIX IN (IC154①)	Normally “H”, “L” when dew condensation has formed.						
REEL TA	I	SS-83 BOARD IC151 MATRIX IN (RS-18BOARD Q309)	ON/OFF by rotation of T reel (take-up).						
REEL TB	I	SS-83 BOARD IC151 MATRIX IN (RS-18BOARD Q311)	ON/OFF by rotation of T reel (take-up).						
REEL S	I	SS-83 BOARD IC151 MATRIX IN (RS-18BOARD Q313)	ON/OFF by rotation of S reel (supply).						
CONT M CW	O	SS-83 BOARD IC151 ⑯	Normally “L”, “H” pulse only when changing mechanism mode.						
CONT M CCW	O	SS-83 BOARD IC151 ⑰	Normally “L”, “H” pulse only when changing mechanism mode.						
LOAD M CW	O	SS-83 BOARD IC151 ⑧	Normally “L”, “H” suring tape threading.						
LOAD M CCW	O	SS-83 BOARD IC151 ⑨	Normally “L”, “H” suring tape threading.						
$\overline{\text{BRAKE START}}$	O	SS-83 BOARD IC151 ㉘	H	H	H	H	H	H	H
$\overline{\text{BRAKE HOLD}}$	O	SS-83 BOARD IC151 ㉙	H	L	L	H	L	H	H
$\overline{\text{TAPE LED}}$	O	SS-83 BOARD IC151 ㉗	*3	*3	*3	*3	*3	*3	*3
REEL LED	O	SS-83 BOARD IC151 ⑲	A pulse of approx. 1 kHz.						

*1. See “MODE SWITCH PATTERN”.
*2. See “LOADING SWITCH PATTERN”.
*3. Cycle corresponding to mode with 0.5 msec “L” pulse.

MODE SWITCH PATTERN

(↻) CW ← Rotating direction of mode switch → CCW (↺)

Switch position (mode)		EJECT		LOAD		FF/REW		STOP		FWD		RVS	
Switch pattern	7	4	7	2	7	6	7	3	7	1	7	5	7
MODE SW A	×	○	×	○	×	○	×	×	×	×	×	×	×
MODE SW B	×	○	×	×	×	×	×	×	×	○	×	○	×
MODE SW C	×	×	×	○	×	×	×	○	×	○	×	×	×

○ ··· Short-circuit
× ··· Open

LOADIN

Switch (m
Switch
LOAD
LOAD
LOAD

INSERT	INSERT PAUSE
*2	*1
L	L
*3	*3
L	L
L *4	L *4
L *4	L
H	H
H *5	H *5
L	L
L	L
L	L
H	L
L	H
L	L
L	L
H *7	H *7
L	L
L	L

3-12. SYSTEM CONTROL — MECHANISM BLOCK INTERFACE

Signal name	I/O	REF No. PIN No.	STOP	FF	REW	CUE	REV	PB	PB・PAUSE	REC	REC・PAUSE	RVS	AUDIO DUB	AUDIO PAUSE	INSERT	INSERT PAUSE
MODE SW *1	I	SS-83 BOARD IC151 MATRIX IN (RS-18BOARD W303⑥~③)	3	6	6	1	5	1	1	1	1	5	1	1	1	1
LOAD SW *2	I	SS-83 BOARD IC151 MATRIX IN (RS-18BOARD W303⑩~⑦)	3	3	3	3	3	3	3	3	3	3	3	3	3	3
CASSETTE LOCK SW	I	SS-83 BOARD IC151 MATRIX IN (CN306 W303①②)	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
TAPE TOP	I	SS-83 BOARD IC151 MATRIX IN (W502③)	Normally "L", "H" at tape top.													
TAPE END	I	SS-83 BOARD IC151 MATRIX IN (CN501①)	Normally "L", "H" at tape end.													
$\overline{\text{DEW (M)}}$	I	SS-83 BOARD IC151 MATRIX IN (IC154①)	Normally "H", "L" when dew condensation has formed.													
REEL TA	I	SS-83 BOARD IC151 MATRIX IN (RS-18BOARD Q309)	ON/OFF by rotation of T reel (take-up).													
REEL TB	I	SS-83 BOARD IC151 MATRIX IN (RS-18BOARD Q311)	ON/OFF by rotation of T reel (take-up).													
REEL S	I	SS-83 BOARD IC151 MATRIX IN (RS-18BOARD Q313)	ON/OFF by rotation of S reel (supply).													
CONT M CW	O	SS-83 BOARD IC151 ⑯	Normally "L", "H" pulse only when changing mechanism mode.													
CONT M CCW	O	SS-83 BOARD IC151 ⑰	Normally "L", "H" pulse only when changing mechanism mode.													
LOAD M CW	O	SS-83 BOARD IC151 ⑧	Normally "L", "H" suring tape threading.													
LOAD M CCW	O	SS-83 BOARD IC151 ⑨	Normally "L", "H" suring tape threading.													
$\overline{\text{BRAKE START}}$	O	SS-83 BOARD IC151 ㉘	H	H	H	H	H	H	H	H	H	H	H	H	H	H
$\overline{\text{BRAKE HOLD}}$	O	SS-83 BOARD IC151 ㉙	H	L	L	H	L	H	H	H	H	L	H	H	H	H
$\overline{\text{TAPE LED}}$	O	SS-83 BOARD IC151 ㉗	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3
REEL LED	O	SS-83 BOARD IC151 ⑲	A pulse of approx. 1 kHz.													

*1. See "MODE SWITCH PATTERN".
*2. See "LOADING SWITCH PATTERN".
*3. Cycle corresponding to mode with 0.5 msec "L" pulse.

MODE SWITCH PATTERN

(↻) CW ◄ Rotating direction of mode switch ► CCW (↺)

Switch position (mode)		EJECT		LOAD		FF/REW		STOP		FWD		RVS	
Switch pattern	7	4	7	2	7	6	7	3	7	1	7	5	7
MODE SW A	×	○	×	○	×	○	×	×	×	×	×	×	×
MODE SW B	×	○	×	×	×	×	×	×	×	○	×	○	×
MODE SW C	×	×	×	○	×	×	×	○	×	○	×	×	×

○ ··· Short-circuit
× ··· Open

LOADING SWITCH PATTERN

(↺) CCW ◄ Rotating direction of mode switch ► CW (↻)

Switch position (mode)	LOADING TOP		UNLOAD WAITE		DRUM START		T REEL START		LOADING END
Switch pattern	1	7	5	7	4	7	6	7	3
LOAD SW A	×	×	×	×	○	×	○	×	×
LOAD SW B	○	×	○	×	○	×	×	×	×
LOAD SW C	○	×	×	×	×	×	×	×	○

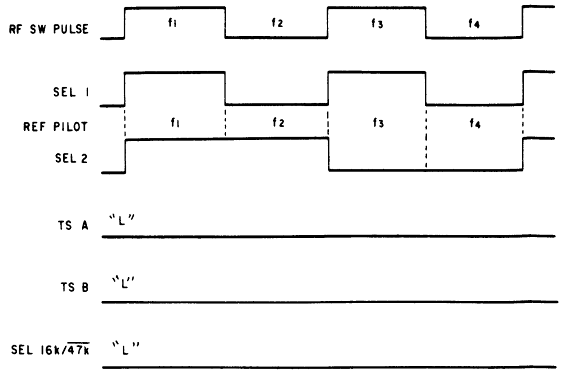
○ ··· Short-circuit
× ··· Open

3-13. MECHANISM CONTROL CPU (IC151 ON SS-83 BOARD) — SERVO BLOCK INTERFACE

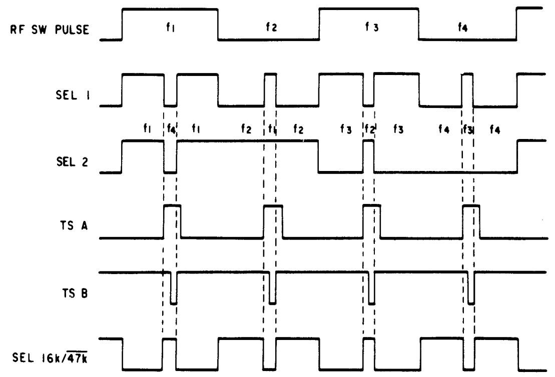
Signal name	I/O	Pin No.	STOP	FF	REW	CUE	REVIEW	PB	PB・PAUSE	FRAME	REC	REC・PAUSE	REVERSE *1	AUDIO DUB	AUDIO DUB PAUSE	INSERT	INSERT PAUSE
C ON MM	O	①	L	L	L	L	L	L	H	*2	L	L	L	L	H	L	L
$\overline{\text{CUE}}$	O	②	H	H	H	L	H	H	H	H	H	H	H	H	H	H	H
$\overline{\text{REVIEW}}$	O	③	H	H	H	H	L	H	H	H	H	H	H	H	H	H	H
PO	O	④	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
P1	O	⑤	L	H	H	L	H	L	L	L	L	L	L	L	L	L	L
P2	O	⑥	L	H	H	L	H	L	L	L	L	L	L	L	L	L	L
P3	O	⑦	L	H	H	H	L	L	L	L	L	L	L	L	L	L	L
SERVO RESET	O	⑩	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
D COMP	O	⑪															
SEL1	O	⑫	H	H	H	*3	*4	*5	H	H *7	*9	H	*10	*18	H	*9	H
SEL2	O	⑬	H	H	H	*3	*4	*5	H/L	H/L	*9	L	*10	*18	H	*9	L
TS A	O	⑭	L	L	L	*3	*4	*5	L	L	L	L	*10	*18	L	L	L
TS B	O	⑮	L	L	L	*3	*4	*5	*6	*8	L	L	*10	*18	*6	L	L
M SP/$\overline{\text{LP}}$	O	⑱	H	H	H	*11	*11	*12	*11	*11	H	H	*11	*12	*11	*12	*11
SCK	I/O	㉝	Serial communication with servo IC (IC161 on SS-83 board).														
SI BUS	O	㉞															
SO BUS	I	㊱															
$\overline{\text{CAP FG}}$	I	㊵	H/L	*13	*13	*13	*13	*13	H/L	*13	*13	H/L	*13	*13	H/L	*13	H/L
$\overline{\text{SLOW}}$	O	㊸	H	H	H	H	H	H	L	L	H	H	H	H	L	H	H
RP PB MODE	O	㊹	L	L	L	H	H	H	H	H	L	L	H	H	H	L	L
RF SW PULSE	I	㊽ ㊾	L	*14	*14	*14	*14	*14	*14	*14	*14	*14	*14	*14	*14	*14	*14
$\overline{\text{CAP ON}}$	O	㊿	H	L	L	L	L	L	H	H *7	L	H	L	L	H	L	L
CAP CW/$\overline{\text{CCW}}$	O	(51)	H	H	L	H	L	H	H	H *7	H	H	L	H	H	H	H
$\overline{\text{CAP ERH}}$	O	(52)	H	H	H	H	H	H	H	H *7	H	H	H	H	H	H	H
$\overline{\text{DRUM ON}}$	O	(53)	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L
STILL VD T	I	(54)	H	30Hz trapezoidal wave which has been synchronized with RF SW PULSE.													
STILL STOP T	I	(55)	H														
JOG VD	I	(59)	L	*15	*15	*15	*15	*15	*15	*15	*15	*15	*15	*15	*15	*15	*15
SEL 16K/$\overline{\text{47K}}$	O	(63)	L	L	L	*3	*4	*5	H	H *16	L	H	*10	*18	H	L	H
$\overline{\text{S.G.C}}$	O	(60)	L	L	L	L	L	L	H	L	L	L	L	L	H	L	L
H CHG	O	(61)	L	L	L	L	L	L	*17	*17	L	L/*17	L	L	*17	L	L/*17

*1. Performed only during REC REVIEW.
*2. "H" pulse (⎍) during frame forwarding.
*3. See timing chart 4.
*4. See timing chart 5.
*5 See timing chart 2.
*6. See timing chart 3.
*7. "L" pulse (⊔) during frame forwarding.
*8. "L" pulse of V cycle. However no "L" pulse during frame forwarding.
*9. See timing chart 1.
*10. See timing chart 6.
*11. Maintains the prior level. "H" when SP mode, "L" when LP mode.
*12. Dependent upon recording mode (SP/LP) of playback tape. "H" when SP mode.
*13. The frequency pulse proportionate to the number of rotations of the capstan motor.
*14. 25 Hz, 50% duty pulse.
*15. "H" pulse of V cycle.
*16. "L" pulse (⊔⊔) during frame forwarding.
*17. 25 Hz, 50% duty pulse when SP mode, "L" when LP mode.
*18. See timing chart 7.

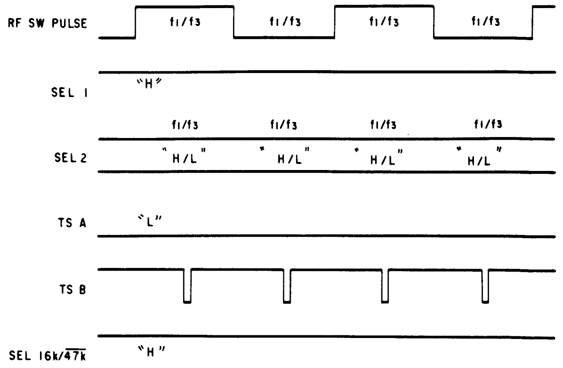
TIMING CHART 1 (REC)


RF SW PULSE
f1
f2
f3
f4
SEL 1
REF PILOT
f1
f2
f3
f4
SEL 2
TS A
"L"
TS B
"L"
SEL 16k/47k
"L"

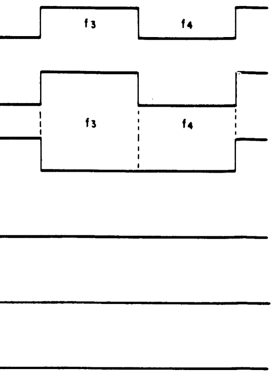
TIMING CHART 2 (PB)


RF SW PULSE
f1
f2
f3
f4
SEL 1
f1
f4
f1
f2
f1
f2
f3
f2
f3
f4
f3
f4
SEL 2
TS A
TS B
SEL 16k/47k

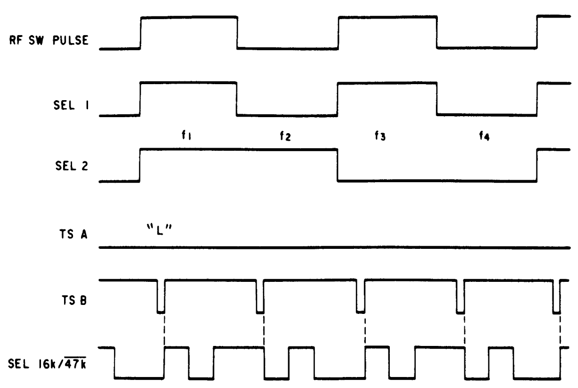
TIMING CHART 3 (PB, PAUSE)


RF SW PULSE
f1/f3
f1/f3
f1/f3
f1/f3
SEL 1
"H"
f1/f3
f1/f3
f1/f3
f1/f3
SEL 2
"H/L"
"H/L"
"H/L"
"H/L"
TS A
"L"
TS B
SEL 16k/47k
"H"

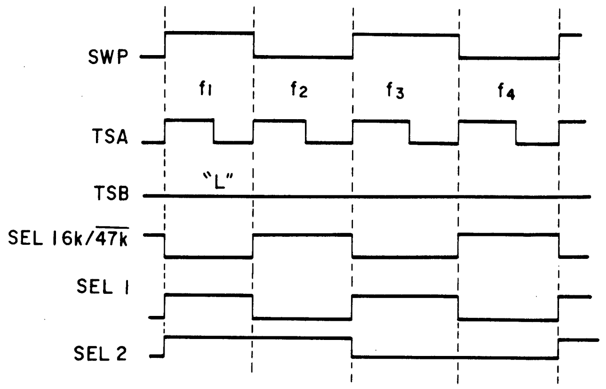
EC)



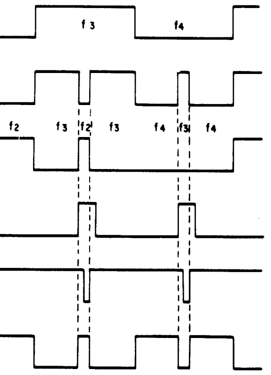
TIMING CHART 4 (CUE)



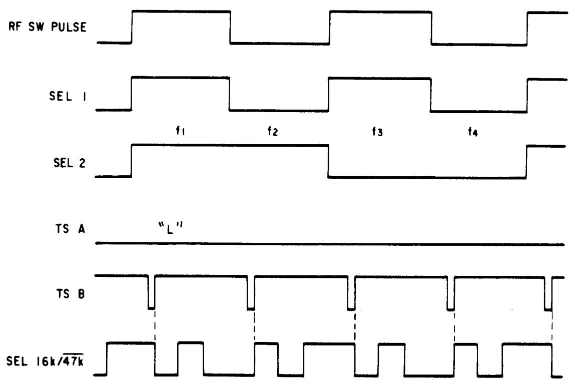
TIMING CHART 7 (DUB)



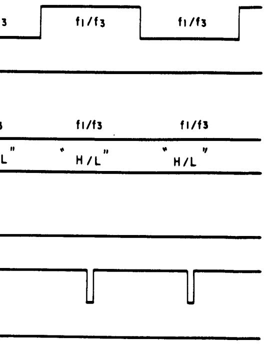
B)



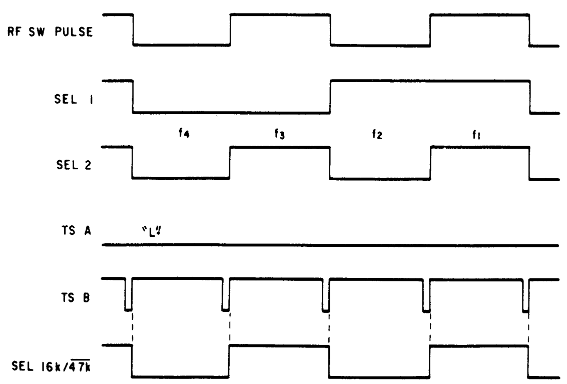
TIMING CHART 5 (REVIEW)



PAUSE)



TIMING CHART 6 (REVERSE)



3-14. CAMERA SYSTEM CONTROL CPU (IC701 ON FC-15 BOARD) — PERIPHERAL CIRCUIT INTERFACE

Signal name	I/O	PIN No.	Input/Output level
WR	O	②	"H" when the colour setting of wiper is at white, red, violet or yellow.
RESET	I	③	Normally "L". "H" pulse is input when the lithium battery is mounted or when the power supply turns on without the lithium battery.
CL1	I	⑤	System clock oscillation pin (it oscillates only during the period the S/S 5V is at ON. Oscillation frequency : approx. 330 kHz)
CL2	O	⑨	
DDS CS	I	⑩	A communication request signal ("H" pulse of V cycle) from the mode control CPU (IC152 on SS-83 board).
POWER DOWN	I	⑪	"L" when the power supply (S/S 5V) of VTR section is at ON.
$\overline{\text{SCK}}$	I/O	⑫	Communication serial data transfer clock input/output ("L" pulse train of V cycle) with mode control CPU and character generator (IC802/IC806 on CG-2 board).
SO	O	⑮	Serial data output ("H" pulse train of V cycle) to mode control CPU and character generator.
SI	I	⑯	Input ("H" pulse train of V cycle) from mode control CPU and character generator.
LI DWN	I	⑰	Detection input of lithium battery down. "H" when battery is down.
$\overline{\text{CAM DWN}}$	I	⑱	"H" when the power supply (F5V) of camera section is at on.
TEST	I	⑲	Pull-up to "H" level. TEST mode when at "L".
BUS ON	O	⑳	Communication selection signal of mode control CPU and communication character generator ("H" level during communication with mode control CPU. Communication cycle is V cycle.)
STB1	O	㉑	Strobe signal for EVF character generator (IC803 on CG-2 board) ("H" pulse output of approximately V cycle).
STB2	O	㉒	Strobe signal for video output character generator (IC803 on CG-2 board) ("H" pulse output of 4V cycle)
ZOOM TELE	O	㉓	"H" when the zoom ring is turned to TELE side.
ZOOM WIDE	O	㉔	"H" when the zoom ring is turned to WIDE side.
$\overline{\text{INT.REC LED}}$	O	㉕	"L" during INTERVAL REC mode.
FD/$\overline{\text{WIPER}}$	O	㉖	Selection output of fader mode and wiper mode ("H" during fader mode)
MD4	O	㉘	Key matrix scanning output ("L" pulse of 4V cycles)
MD5	O	㉚	
X1	I	㉜	Timer clock oscillating pin (Oscillates regularly when the lithium battery is mounted. Oscillation frequency is approx. 32.8 kHz.)
X2	O	㉞	
$\overline{\text{MD0}}$	O	㊱	Key matrix scanning output ("L" pulse of 4V cycles)
$\overline{\text{MD1}}$	O	㊲	
$\overline{\text{MD2}}$	O	㊳	
$\overline{\text{MD3}}$	O	㊴	
MI0	I	㊶	Key matrix scanning input
MI1	I	㊷	
MI2	I	㊸	
MI3	I	㊹	
FD0	O	㊻	Normally "L" level. "H" pulse output during operating of fader or wiper.
FD1	O	㊼	
FD2	O	㊽	
FD3	O	㊾	
FD4	O	㊿	
WB	O	(51)	"H" when the colour setting of wiper is at white, blue, cyan or violet.
WG	O	(52)	"H" when the colour setting of wiper is at white, green, cyan or yellow.

3-15. SYSTEM CONTROL — PCM/AFM AUDIO BLOCK INTERFACE

Signal name	I/O	PIN No.	STOP	FF	REW	CUE	REVIEW	PB	PB・PAUSE	FRAME	REC	REC・PAUSE	REVERSE	AUDIO DUB	AUDIO DUB PAUSE	INSERT	INSERT PAUSE
MIX 1	O	PC-32 BOARD IC016①	*1	*1	*1	*2	*2	*3	*2	*2	*1	*1	*1	*3	*3	*2	*2
MIX 2	O	PC-32 BOARD IC016②															
ME/$\overline{\text{MP}}$	O	PC-32 BOARD IC016③	"L" When MP type tape is used.														
VA PB MODE	O	PC-32 BOARD IC016④	L	L	L	H	H	H	H	H	L	L	H	H	H	L	L
CAM/$\overline{\text{LINE}}$	O	PC-32 BOARD IC016⑤	"H" when camera block power supply is ON.														
S/S	O	PC-32 BOARD IC016⑥	Control signal of IC012 (CX20176) signal system power supply. Normally "L", "H" only when the power is being turned OF														
C/C	O	PC-32 BOARD IC016⑦	Charge control signal of IC012 (CX20176) signal input terminal capacitor. Normally "H"														
PCM PB MODE	O	PC-32 BOARD IC016⑧	L	L	L	H	H	H	H	H	L	L	L	L	L	L	L
A DUB LED	O	PC-32 BOARD IC016⑪	L	L	L	L	L	L	L	L	L	L	L	L	H	L	L
A MUTE	O	PC-32 BOARD IC016⑫	Normally "L". "H" during mode change such as STOP→PB.														
PCM LED	O	PC-32 BOARD IC016⑬	H	H	H	*5	*5	*3	*2	*2	H	H	*5	H	H	H	H
FE RA	O	SS-83 BOARD IC151㊶	L	L	L	L	L	L	L	L	L	L	L	*6	L	L	L
FE RS	O	SS-83 BOARD IC151㊷	L	L	L	L	L	L	L	L	H	L	L	*6	L	H	L
$\overline{\text{CAP ON 2}}$	O	SS-83 BOARD IC151(62)	H	H	H	H	H	H	H	H	H	H	H	L	H	L	H
AF REC	O	SS-83 BOARD IC151(64)	L	L	L	L	L	L	L	L	L	L	L	H	H	L	L
PCM ACT	I	SS-83 BOARD IC152(56)	H	H	H	*4	*4	*4	*4	*4	H	H	*4	H	H	H	H

*1. Dependent upon AUDIO MONITOR SW.
*2. Maintains prior level.
*3. As shown in additional tables (I, II). "L"
*4. Only when PCM audio sigal is not played back.
*5. Dependent upon PVLD.
*6. 25 Hz pulse (⎍), only when SP mode.

Additional table I **Normal PB**

①When PVLD is continuously "H" for more than 42 fields.

AUDIO MONITOR	PCM (AUTO)	MIX	STD
MIX 1	L	L	H
MIX 2	L	H	L
AUDIO MUTE	L	L	L
PCM LED	H	H	H

②Less than 96 field after PVLD changed to "L", but not yet the condition described in ①.

AUDIO MONITOR	PCM (AUTO)	MIX	STD
MIX 1	L	H	H
MIX 2	L	L	L
AUDIO MUTE	H	L	L
PCM LED	H	H	H

③More than 96 fields after PVLD changed to "L", transistional period prior to reaching condition described in ①.

AUDIO MONITOR	PCM (AUTO)	MIX	STD
MIX 1	H	H	H
MIX 2	L	L	L
AUDIO MUTE	L	L	L
PCM LED	L	L	L

*When AUDIO MONITOR SW is set to STD, MIX 1, MIX 2, and AUDIO MUTE do not affect PVLD.

Additional table II **E-E**

AUDIO MONITOR	PCM (AUTO)	MIX	STD
MIX 1	L	L	H
MIX 2	L	H	L
AUDIO MUTE	L	L	L
PCM LED	H	H	H

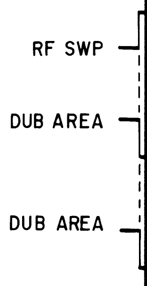
A DUB, A DUB PAUSE

AUDIO MONITOR	PCM (AUTO)	MIX	STD
MIX 1	L	L	L
MIX 2	L	L	L
AUDIO MUTE	L	L	H
PCM LED	H	H	H

3-16. PCM

Signal na
HD INSERT
H SYNC
DUB AREA
REC AREA

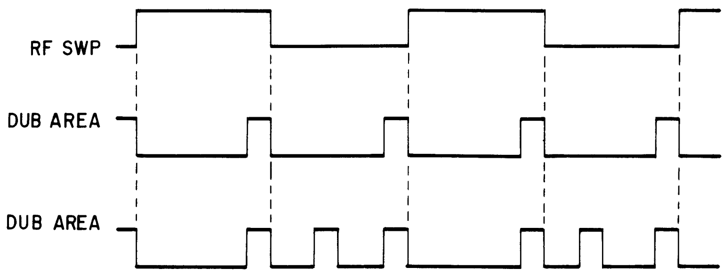
*1. HD sig
*2. "H" pu
*3. See tim



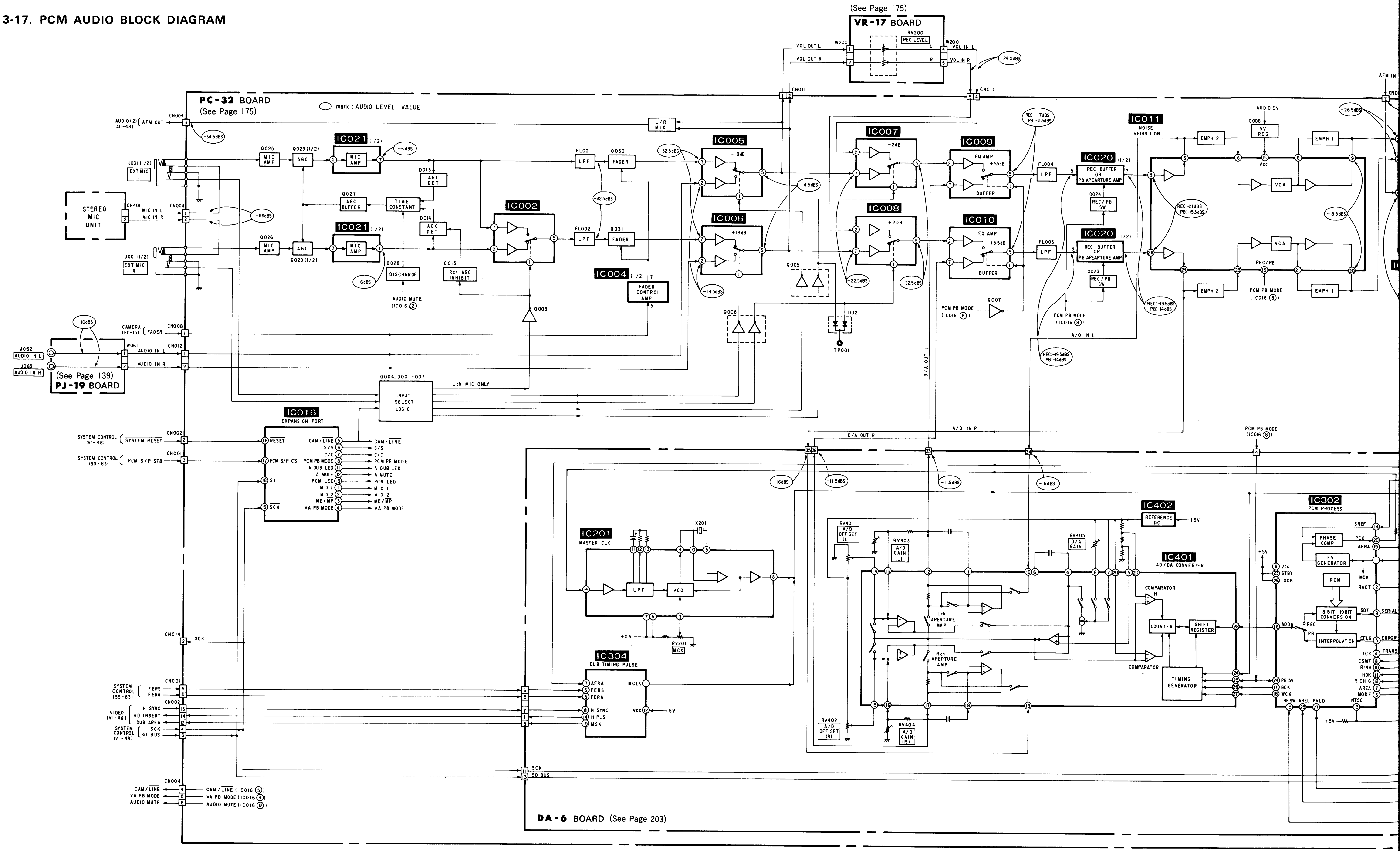
3-16. PCM AUDIO — VIDEO BLOCK INTERFACE

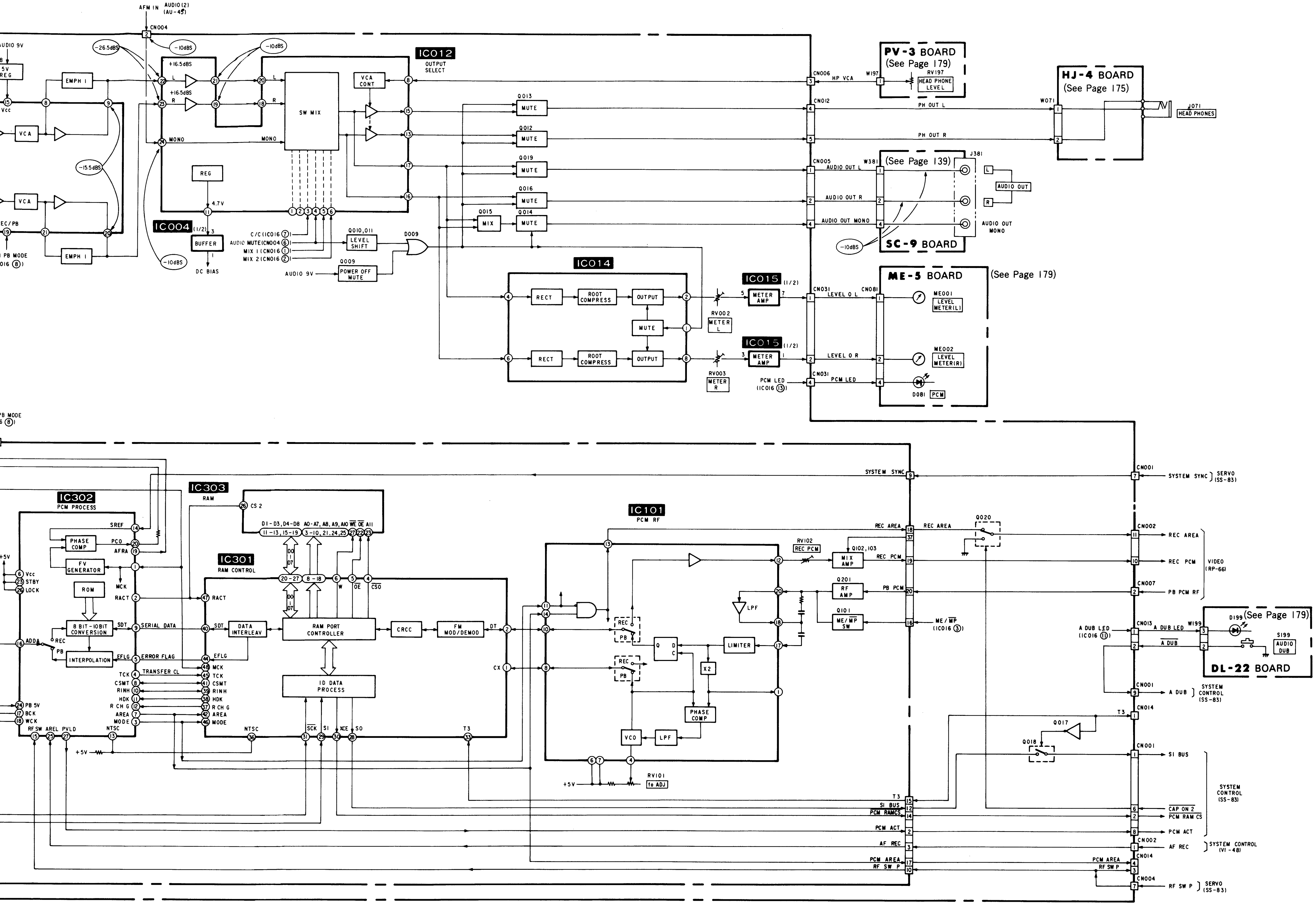
Signal name	I/O	PIN No.	STOP	FF	REW	CUE	REVIEW	PB	PB・PAUSE	FRAME	REC	REC・PAUSE	REVERSE	AUDIO DUB	AUDIO DUB PAUSE	INSERT	INSERT PAUSE
HD INSERT	O	PC-32 BOARD DA-6①	L	L	L	L	L	L	L	L	L	L	L	*1	L	L	L
H SYNC	I	PC-32 BOARD DA-6⑦	"H"pulse of H cycle.														
DUB AREA	O	PC-32 BOARD DA-6⑧	L	L	L	L	L	L	L	L	L	L	L	*3	L	L	L
REC AREA	O	PC-32 BOARD DA-6⑱	L	L	L	L	L	L	L	L	*2	L	L	*2	L	*2	L

*1. HD signal ("H" pulse of H cycle) is output during playback signal masking period (PCM audio signal recordng period.).
*2. "H" pulse of V cycle.
*3. See timing chart.

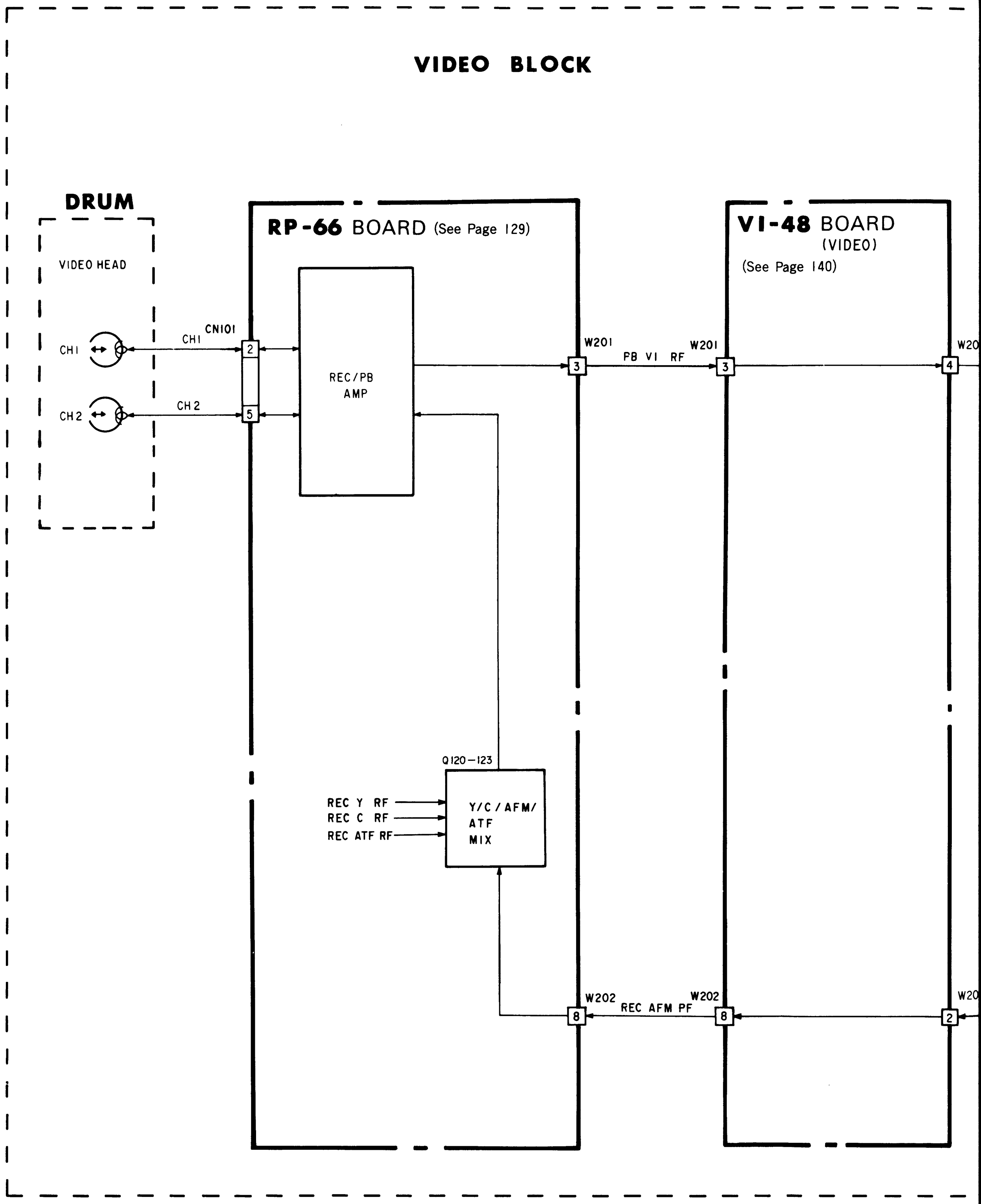


3-17. PCM AUDIO BLOCK DIAGRAM

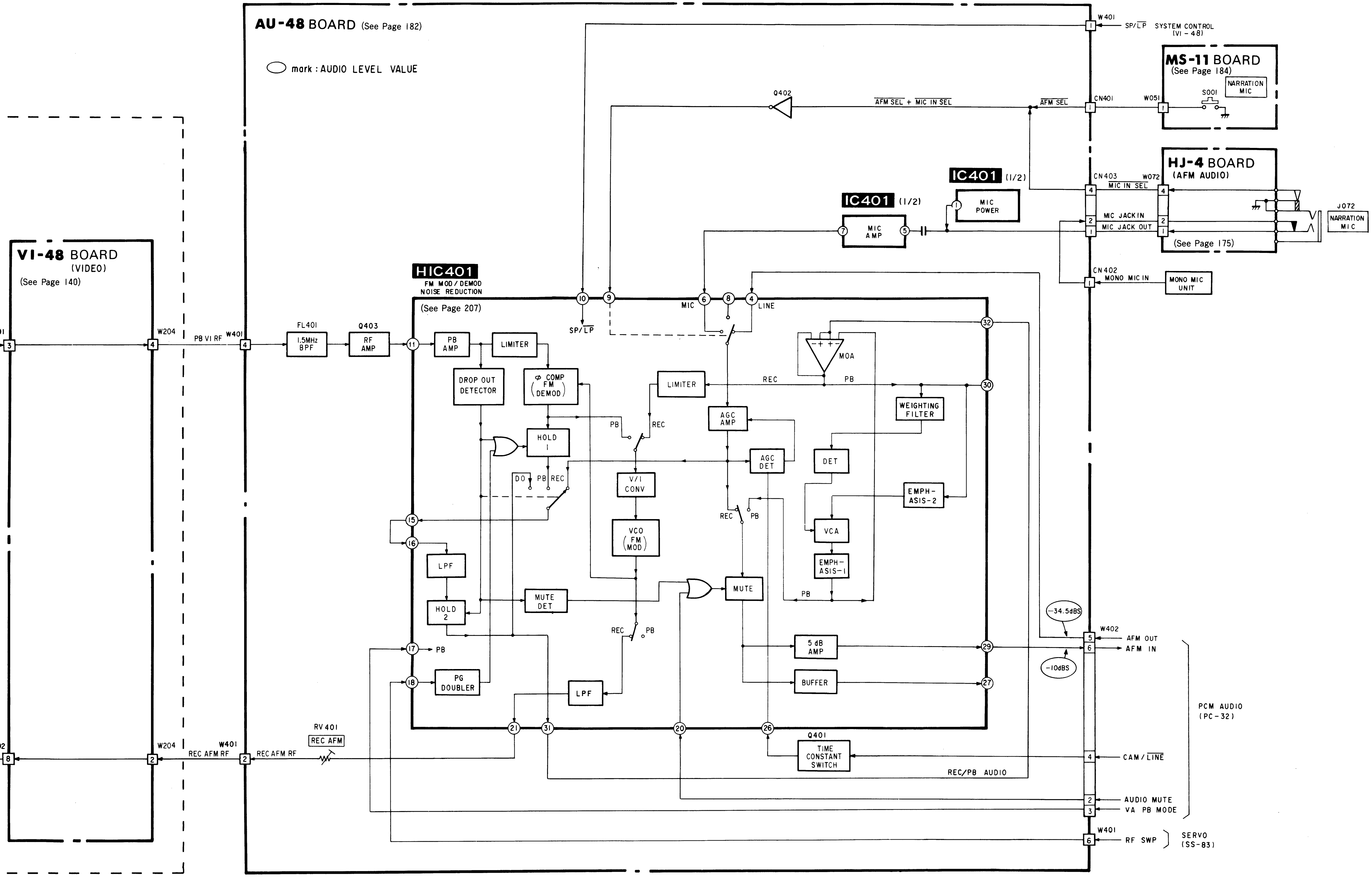

(See Page 175)
VR-17 BOARD
RV200
REC LEVEL
W200
VOL OUT L
VOL OUT R
VOL IN L
VOL IN R
-24.5dBS
CN011
PC-32 BOARD
(See Page 175)
○ mark : AUDIO LEVEL VALUE
AUDIO (2) (AU-48)
AFM OUT
CN004
-34.5dBS
L/R MIX
Q025
MIC AMP
Q029 (1/2)
AGC
IC021 (1/2)
MIC AMP
-6dBS
J001 (1/2)
EXT MIC L
STEREO MIC UNIT
CN401
MIC IN L
MIC IN R
CN003
-66dBS
Q027
AGC BUFFER
TIME CONSTANT
D013
AGC DET
D014
AGC DET
Q026
MIC AMP
AGC
Q029 (1/2)
IC021 (1/2)
MIC AMP
J001 (1/2)
EXT MIC R
Q028
DISCHARGE
-6dBS
D015
Rch AGC INHIBIT
AUDIO MUTE (IC016 ②)
IC002
Q003
FL001
LPF
Q030
FADER
FL002
LPF
Q031
FADER
-32.5dBS
IC004 (1/2)
FADER CONTROL AMP
-32.5dBS
IC005
+18dB
-14.5dBS
IC006
+18dB
-14.5dBS
Q006
Q005
D021
TP001
IC007
+2dB
IC008
+2dB
-22.5dBS
-22.5dBS
IC009
EQ AMP
+5.5dB
BUFFER
IC010
EQ AMP
+5.5dB
BUFFER
Q007
PCM PB MODE (IC016 ⑧)
REC:-17dBS PB:-11.5dBS
FL004
LPF
FL003
LPF
IC020 (1/2)
REC BUFFER OR PB APEARTURE AMP
Q024
REC/PB SW
IC020 (1/2)
REC BUFFER OR PB APEARTURE AMP
Q023
REC/PB SW
PCM PB MODE (IC016 ⑧)
A/D IN L
REC:-19.5dBS PB:-14dBS
IC011
NOISE REDUCTION
EMPH 2
AUDIO 9V
Q008
5V REG
Vcc
EMPH 1
VCA
VCA
REC:-21dBS PB:-15.5dBS
REC:-19.5dBS PB:-14dBS
-26.5dBS
-15.5dBS
REC/PB
EMPH 2
EMPH 1
PCM PB MODE (IC016 ⑧)
AFM IN
CN00
CAMERA (FC-15)
FADER
CN008
-10dBS
J062 AUDIO IN L
J063 AUDIO IN R
W061
AUDIO IN L
AUDIO IN R
CN012
(See Page 139)
PJ-19 BOARD
Q004, D001-007
INPUT SELECT LOGIC
Lch MIC ONLY
D/A OUT L
D/A OUT R
A/D IN R
PCM PB MODE (IC016 ⑧)
IC016
EXPANSION PORT
SYSTEM CONTROL (VI-48)
SYSTEM RESET
CN002
SYSTEM CONTROL (SS-83)
PCM S/P STB
CN001
RESET
PCM S/P CS
SI
SCK
CAM/LINE
S/S
C/C
PCM PB MODE
A DUB LED
A MUTE
PCM LED
MIX 1
MIX 2
ME/MP
VA PB MODE
-16dBS
-11.5dBS
-11.5dBS
-16dBS
IC402
REFERENCE DC
+5V
IC302
PCM PROCESS
RV401
A/D OFF SET (L)
RV403
A/D GAIN (L)
RV405
D/A GAIN
IC401
AD/DA CONVERTER
COMPARATOR H
COMPARATOR L
COUNTER
SHIFT REGISTER
TIMING GENERATOR
Lch APERTURE AMP
Rch APERTURE AMP
RV402
A/D OFF SET (R)
RV404
A/D GAIN (R)
IC201
MASTER CLK
X201
LPF
VCO
+5V
RV201
MCK
CN014
SCK
SREF
PHASE COMP
PCO
AFRA
FV GENERATOR
ROM
MCK
RACT
8 BIT-10BIT CONVERSION
SDT
SERIAL
ADD
REC
PB
INTERPOLATION
EFLG
ERROR
TCK
TRANS
CSMT
RINH
HDK
R CH G
AREA
MODE
NTSC
Vcc
STBY
LOCK
PB 5V
BCK
WCK
RFSW
AREL
PVLD
+5V
IC304
DUB TIMING PULSE
AFRA
FERS
FERA
H SYNC
H PLS
MSK 1
MCLK
Vcc
5V
SYSTEM CONTROL (SS-83)
FERS
FERA
VIDEO (VI-48)
H SYNC
HD INSERT
DUB AREA
SYSTEM CONTROL (VI-48)
SCK
SO BUS
CN004
CAM/LINE
VA PB MODE
AUDIO MUTE
CAM/LINE (IC016 ⑤)
VA PB MODE (IC016 ④)
AUDIO MUTE (IC016 ⑫)
SCK
SO BUS
DA-6 BOARD (See Page 203)


AFM IN AUDIO(2) (AU-45)
CN004
IC012
OUTPUT SELECT
VCA CONT
SW MIX
EMPH I
VCA
REG
4.7V
IC004
BUFFER
DC BIAS
C/C (IC016 ⑦)
AUDIO MUTE(CN004 ⑥)
MIX 1 (CN016 ①)
MIX 2 (CN016 ②)
AUDIO 9V
LEVEL SHIFT
POWER OFF MUTE
Q010,011
Q009
D009
Q013 MUTE
Q012 MUTE
Q019 MUTE
Q016 MUTE
Q015 MIX
Q014 MUTE
IC014
RECT
ROOT COMPRESS
OUTPUT
MUTE
IC015 (1/2)
METER AMP
RV002 METER L
RV003 METER R
PCM LED (IC016 ⑬)
CN006 HP VCA
CN012
CN005
AUDIO OUT L
AUDIO OUT R
AUDIO OUT MONO
CN031
LEVEL O L
LEVEL O R
PCM LED
PV-3 BOARD
(See Page 179)
W197
RV197
HEAD PHONE LEVEL
HJ-4 BOARD
(See Page 175)
W071
PH OUT L
PH OUT R
J071 HEAD PHONES
(See Page 139)
W381
J381
AUDIO OUT
AUDIO OUT MONO
SC-9 BOARD
ME-5 BOARD
(See Page 179)
CN081
ME001 LEVEL METER(L)
ME002 LEVEL METER(R)
D081 PCM
-26.5dBS
-10dBS
-15.5dBS
+16.5dBS
IC302
PCM PROCESS
PHASE COMP
FV GENERATOR
ROM
8 BIT-10BIT CONVERSION
INTERPOLATION
SREF
PCO
AFRA
MCK
RACT
SDT
SERIAL DATA
EFLG
ERROR FLAG
TRANSFER CL
TCK
CSMT
RINH
HDK
R CH G
AREA
MODE
RFSW AREL PVLD
NTSC
+5V
Vcc
STBY
LOCK
PB 5V
BCK
WCK
IC303
RAM
CS 2
D1-D3, D4-D8 A0-A7, A8, A9, A10 WE OE A11
IC301
RAM CONTROL
DATA INTERLEAV
RAM PORT CONTROLLER
ID DATA PROCESS
CRCC
FM MOD/DEMOD
DT
CX
SCK SI XCE SO
T3
IC101
PCM RF
REC PB
LPF
LIMITER
PHASE COMP
VCO
X2
RV101 fo ADJ
RV102 REC PCM
MIX AMP
Q102,103
Q201 RF AMP
Q101 ME/MP SW
ME/MP (IC016 ③)
REC AREA
REC PCM
PB PCM
SYSTEM SYNC
Q020
Q017
Q018
T3
SI BUS
PCM RAMCS
PCM ACT
AF REC
PCM AREA
RF SW P
CN001
SYSTEM SYNC SERVO (SS-83)
CN002
REC AREA
REC PCM
VIDEO (RP-66)
CN007
PB PCM RF
A DUB LED (IC016 ⑪)
CN013
A DUB LED
A DUB
W199
D199
S199 AUDIO DUB
DL-22 BOARD
(See Page 179)
A DUB SYSTEM CONTROL (SS-83)
CN014
SI BUS
CAP ON 2
PCM RAM CS
PCM ACT
SYSTEM CONTROL (SS-83)
AF REC
SYSTEM CONTROL (VI-48)
CN004
RF SW P SERVO (SS-83)

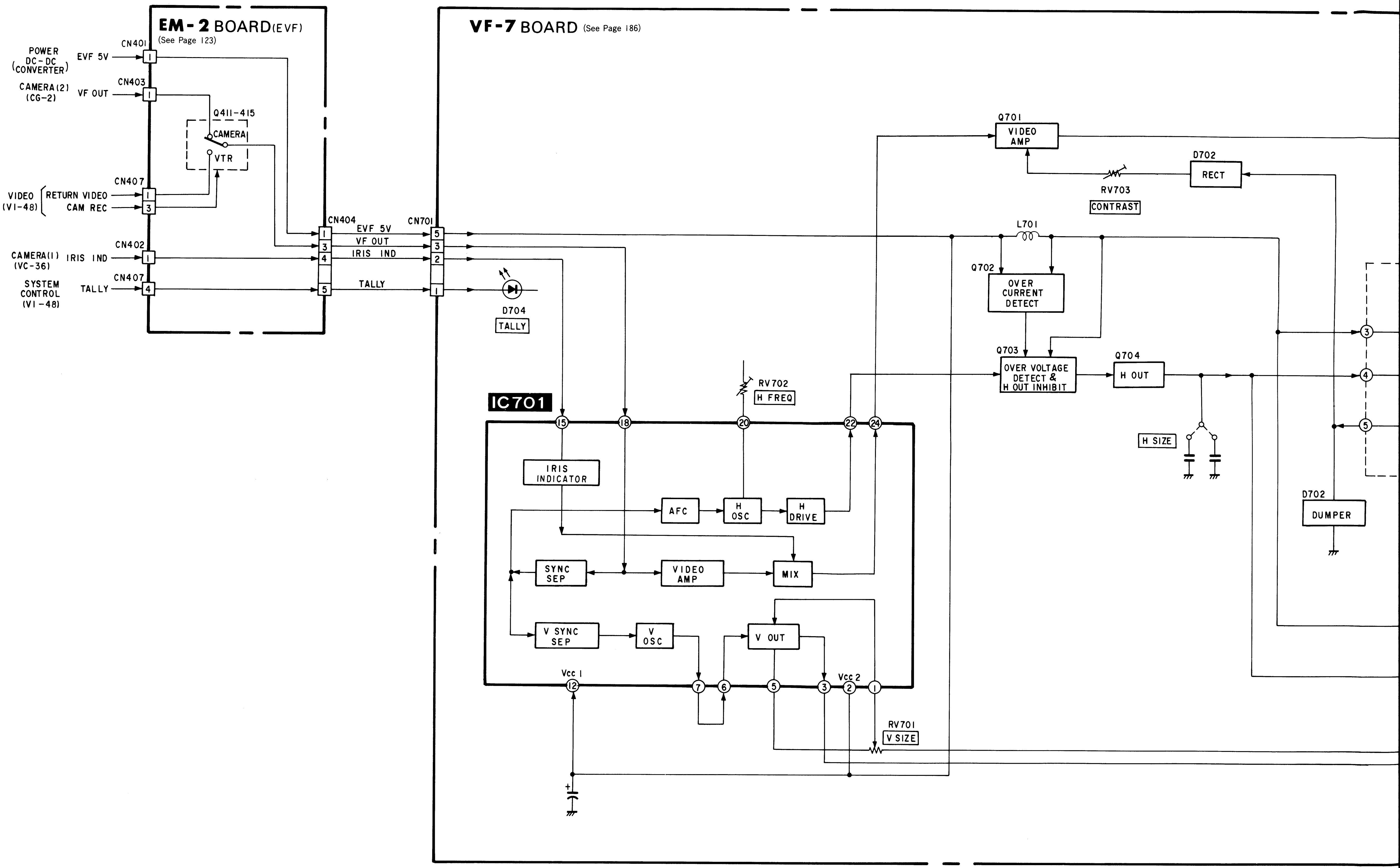
3-18. AFM AUDIO BLOCK DIAGRAM

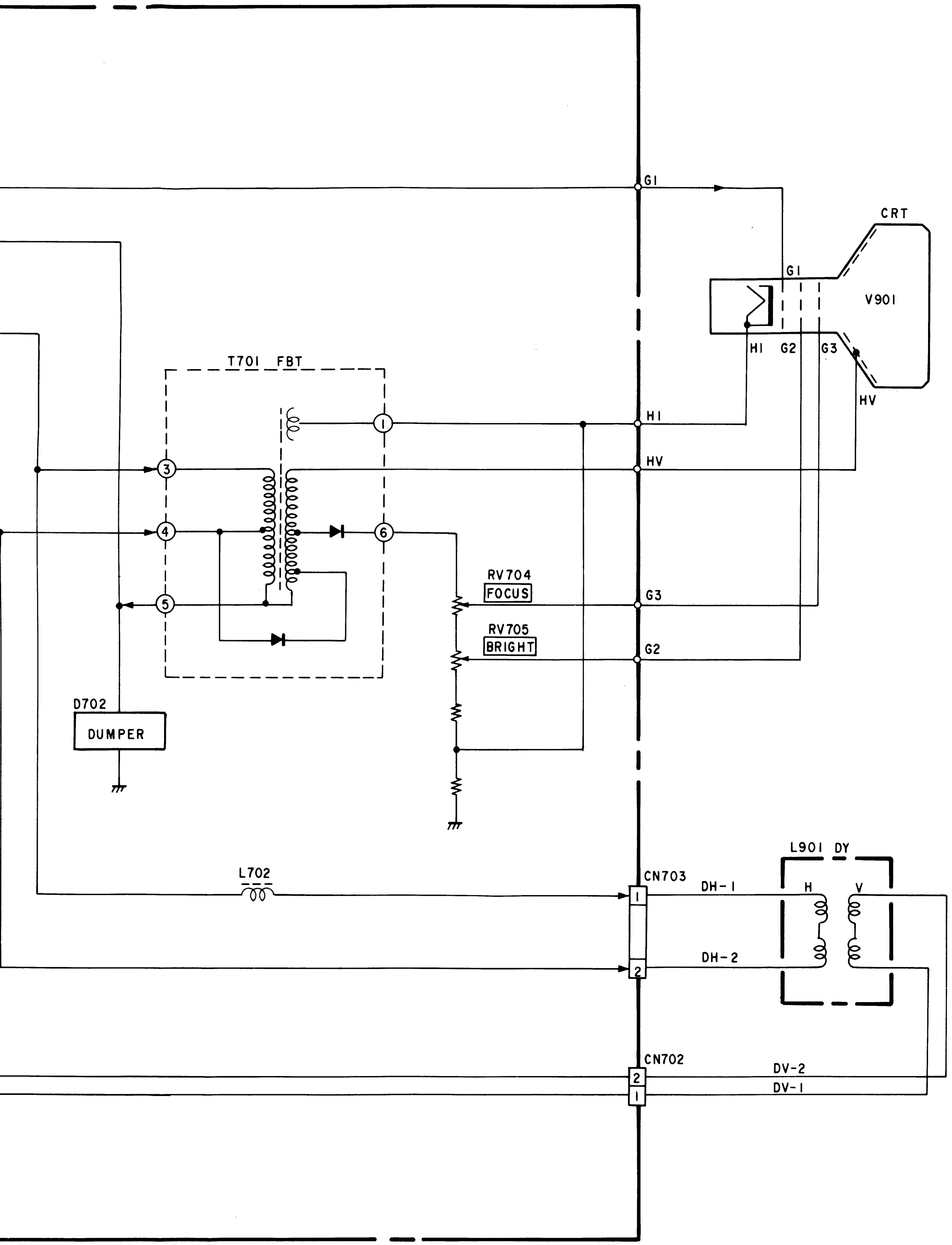

VIDEO BLOCK
DRUM
VIDEO HEAD
CH1
CH2
CN101
CH1
CH2
2
5
RP-66 BOARD (See Page 129)
REC/PB AMP
W201
3
PB VI RF
W201
3
VI-48 BOARD (VIDEO)
(See Page 140)
W20
4
Q120–123
REC Y RF
REC C RF
REC ATF RF
Y/C/AFM/ ATF MIX
W202
8
REC AFM PF
W202
8
W20
2

-85-

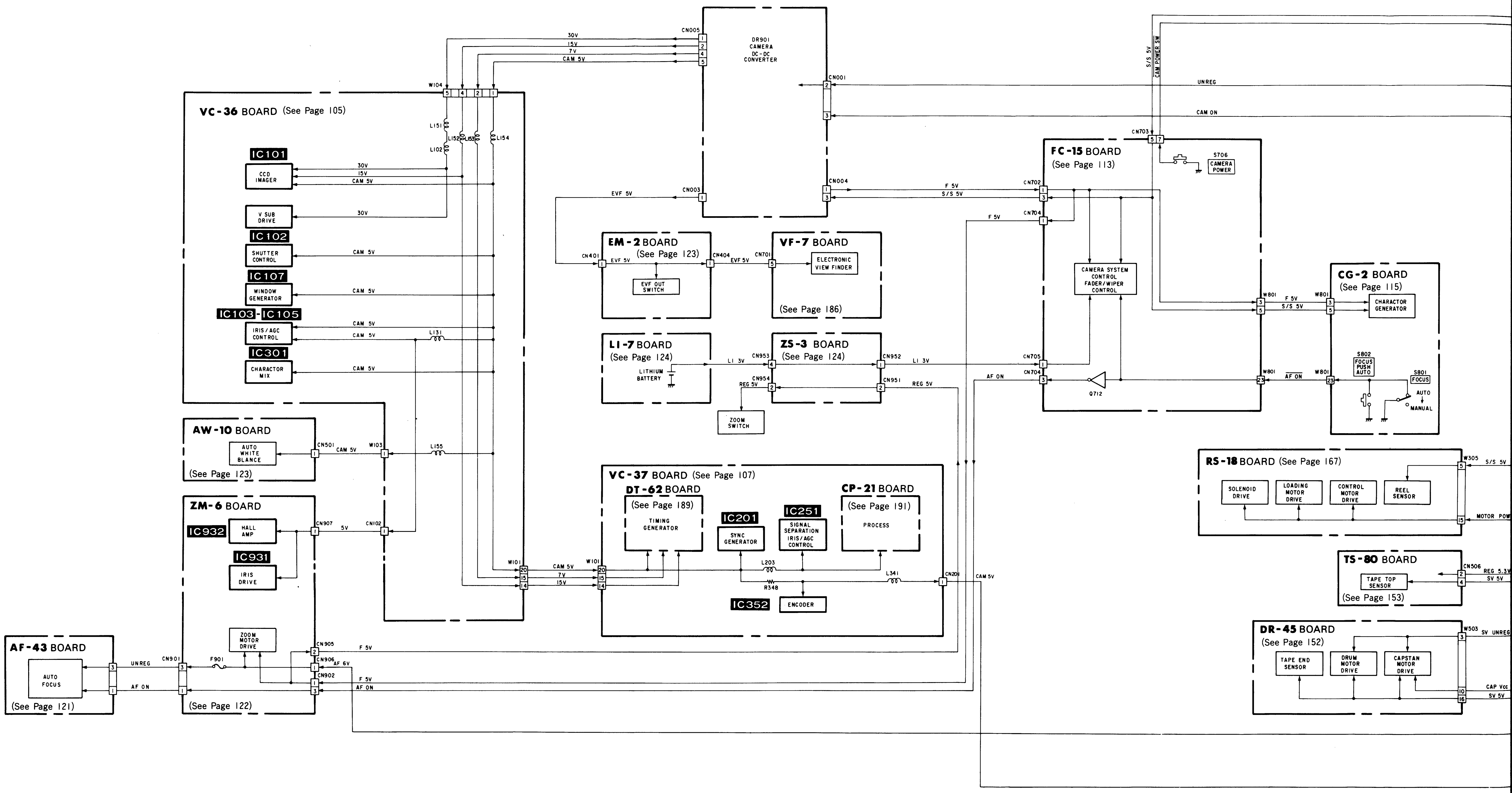

AU-48 BOARD (See Page 182)
mark : AUDIO LEVEL VALUE
VI-48 BOARD
(VIDEO)
(See Page 140)
W204
PB VI RF
W401
FL401
1.5MHz BPF
Q403
RF AMP
HIC401
FM MOD / DEMOD
NOISE REDUCTION
(See Page 207)
PB AMP
LIMITER
DROP OUT DETECTOR
φ COMP (FM DEMOD)
HOLD 1
DO
PB
REC
LPF
HOLD 2
MUTE DET
PG DOUBLER
LPF
V/I CONV
VCO (FM MOD)
LIMITER
AGC AMP
AGC DET
MUTE
5 dB AMP
BUFFER
MOA
WEIGHTING FILTER
DET
EMPH-ASIS-2
VCA
EMPH-ASIS-1
SP/LP
MIC
LINE
Q402
AFM SEL + MIC IN SEL
AFM SEL
IC401 (1/2)
MIC AMP
IC401 (1/2)
MIC POWER
W401
SP/LP SYSTEM CONTROL (VI-48)
MS-11 BOARD
(See Page 184)
NARRATION MIC
S001
CN401
W051
HJ-4 BOARD
(AFM AUDIO)
CN403
W072
MIC IN SEL
MIC JACKIN
MIC JACK OUT
(See Page 175)
J072
NARRATION MIC
CN402
MONO MIC IN
MONO MIC UNIT
-34.5dBS
-10dBS
W402
AFM OUT
AFM IN
PCM AUDIO (PC-32)
CAM / LINE
AUDIO MUTE
VA PB MODE
W401
RF SWP
SERVO (SS-83)
Q401
TIME CONSTANT SWITCH
REC/PB AUDIO
RV401
REC AFM
W204
REC AFM RF
W401
REC AFM RF

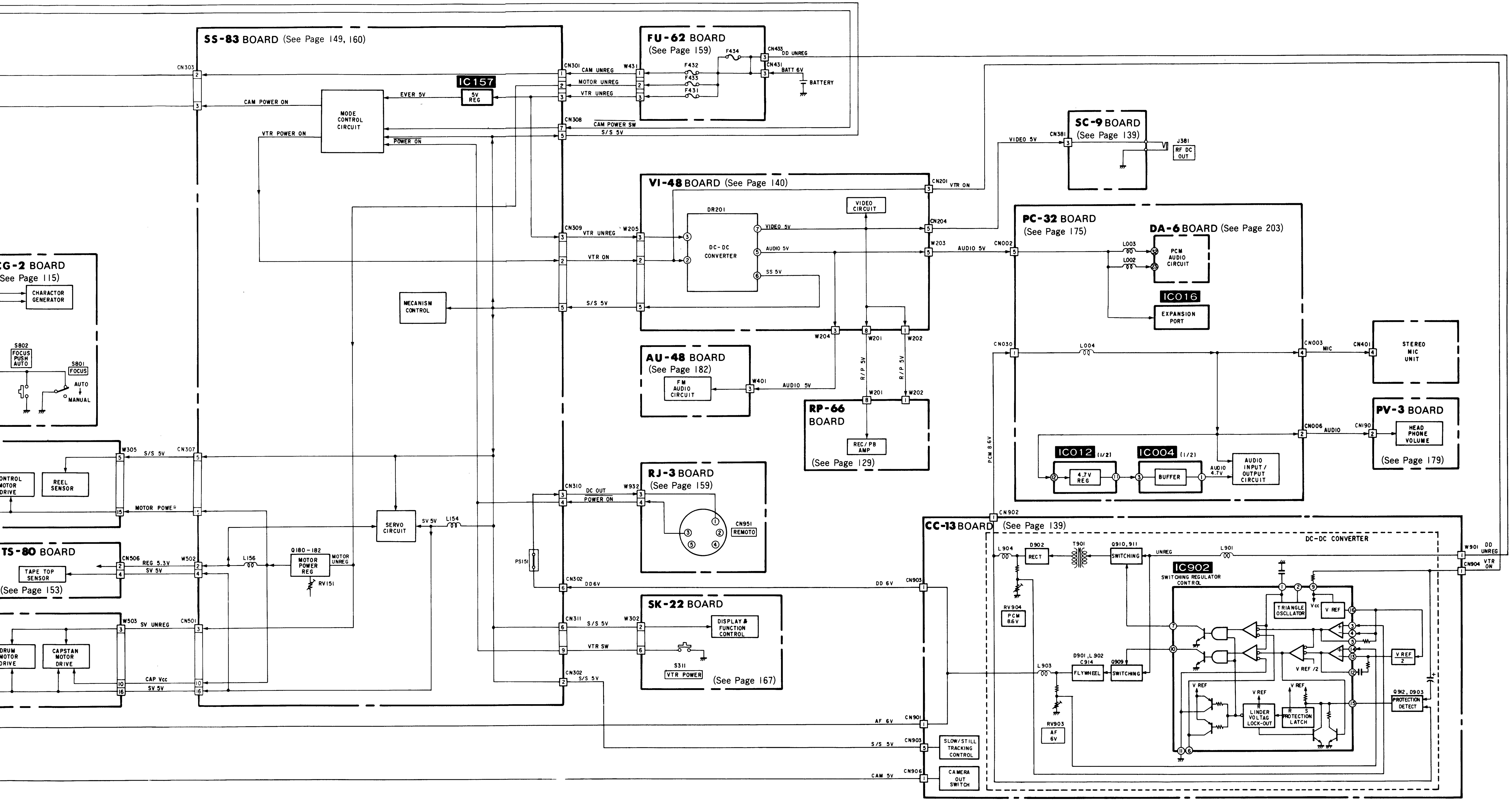
3-19. EVF BLOCK DIAGRAM


EM-2 BOARD(EVF)
(See Page 123)
VF-7 BOARD (See Page 186)
POWER
(DC-DC CONVERTER)
EVF 5V
CN401
CAMERA(2)
(CG-2)
VF OUT
CN403
Q411-415
CAMERA
VTR
VIDEO
(VI-48)
RETURN VIDEO
CAM REC
CN407
CAMERA(1)
(VC-36)
IRIS IND
CN402
SYSTEM
CONTROL
(VI-48)
TALLY
CN407
CN404
CN701
EVF 5V
VF OUT
IRIS IND
TALLY
D704
TALLY
IC701
IRIS INDICATOR
AFC
H OSC
H DRIVE
SYNC SEP
VIDEO AMP
MIX
V SYNC SEP
V OSC
V OUT
Vcc 1
Vcc 2
RV702
H FREQ
RV701
V SIZE
Q701
VIDEO AMP
D702
RECT
RV703
CONTRAST
L701
Q702
OVER CURRENT DETECT
Q703
OVER VOLTAGE DETECT & H OUT INHIBIT
Q704
H OUT
H SIZE
D702
DUMPER


G1
CRT
G1
V901
H1
G2
G3
HV
T701 FBT
1
3
4
5
6
H1
HV
RV704
FOCUS
G3
RV705
BRIGHT
G2
D702
DUMPER
L702
CN703
1
2
DH-1
DH-2
L901 DY
H
V
CN702
2
1
DV-2
DV-1

3-20. POWER BLOCK DIAGRAM

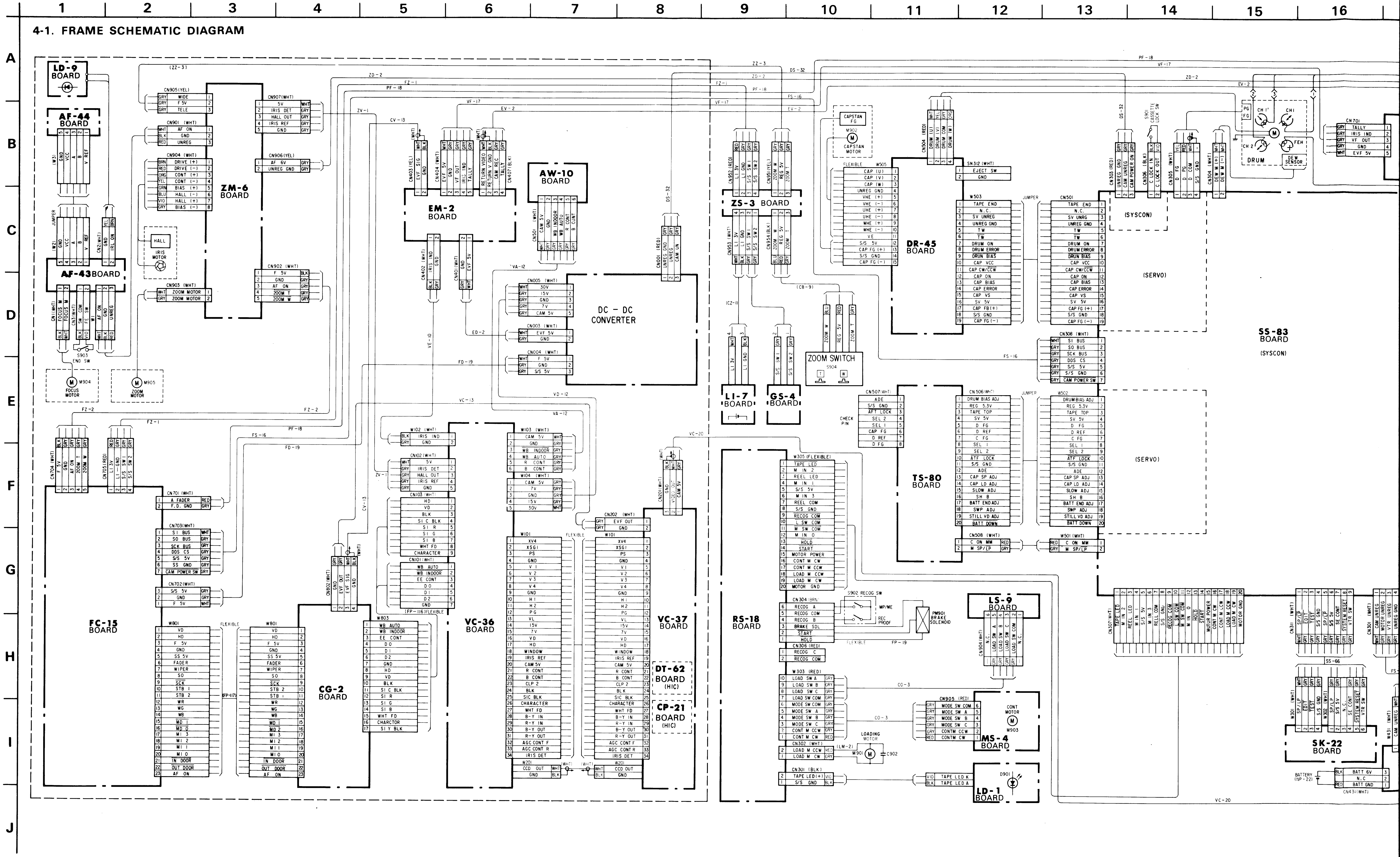

DR901 CAMERA DC-DC CONVERTER
CN005
30V
15V
7V
CAM 5V
CN001
UNREG
CAM ON
CN003
EVF 5V
CN004
F 5V
S/S 5V
VC-36 BOARD (See Page 105)
W104
L151
L152
L153
L154
L102
IC101
CCD IMAGER
V SUB DRIVE
IC102
SHUTTER CONTROL
IC107
WINDOW GENERATOR
IC103-IC105
IRIS/AGC CONTROL
L131
IC301
CHARACTOR MIX
AW-10 BOARD
AUTO WHITE BLANCE
CN501
W103
L155
(See Page 123)
ZM-6 BOARD
IC932
HALL AMP
IC931
IRIS DRIVE
CN907
5V
CN102
ZOOM MOTOR DRIVE
CN905
CN906
AF 6V
CN902
F 5V
AF ON
F901
CN901
UNREG
(See Page 122)
AF-43 BOARD
AUTO FOCUS
(See Page 121)
EM-2 BOARD (See Page 123)
CN401
CN404
EVF OUT SWITCH
VF-7 BOARD
CN701
ELECTRONIC VIEW FINDER
(See Page 186)
LI-7 BOARD (See Page 124)
LITHIUM BATTERY
LI 3V
ZS-3 BOARD (See Page 124)
CN953
CN954
REG 5V
CN952
CN951
ZOOM SWITCH
VC-37 BOARD (See Page 107)
DT-62 BOARD (See Page 189)
TIMING GENERATOR
IC201
SYNC GENERATOR
IC251
SIGNAL SEPARATION IRIS/AGC CONTROL
CP-21 BOARD (See Page 191)
PROCESS
IC352
ENCODER
L203
R348
L341
W101
CN201
CAM 5V
FC-15 BOARD (See Page 113)
CN703
S/S 5V
CAM POWER SW
S706 CAMERA POWER
CN702
CN704
CN705
CAMERA SYSTEM CONTROL FADER/WIPER CONTROL
Q712
CG-2 BOARD (See Page 115)
W801
CHARACTOR GENERATOR
S802 FOCUS PUSH AUTO
S801 FOCUS
AUTO
MANUAL
RS-18 BOARD (See Page 167)
SOLENOID DRIVE
LOADING MOTOR DRIVE
CONTROL MOTOR DRIVE
REEL SENSOR
W305
MOTOR POW
TS-80 BOARD
TAPE TOP SENSOR
(See Page 153)
CN506
REG 5.3V
SV 5V
DR-45 BOARD (See Page 152)
TAPE END SENSOR
DRUM MOTOR DRIVE
CAPSTAN MOTOR DRIVE
W503
SV UNREG
CAP Vcc

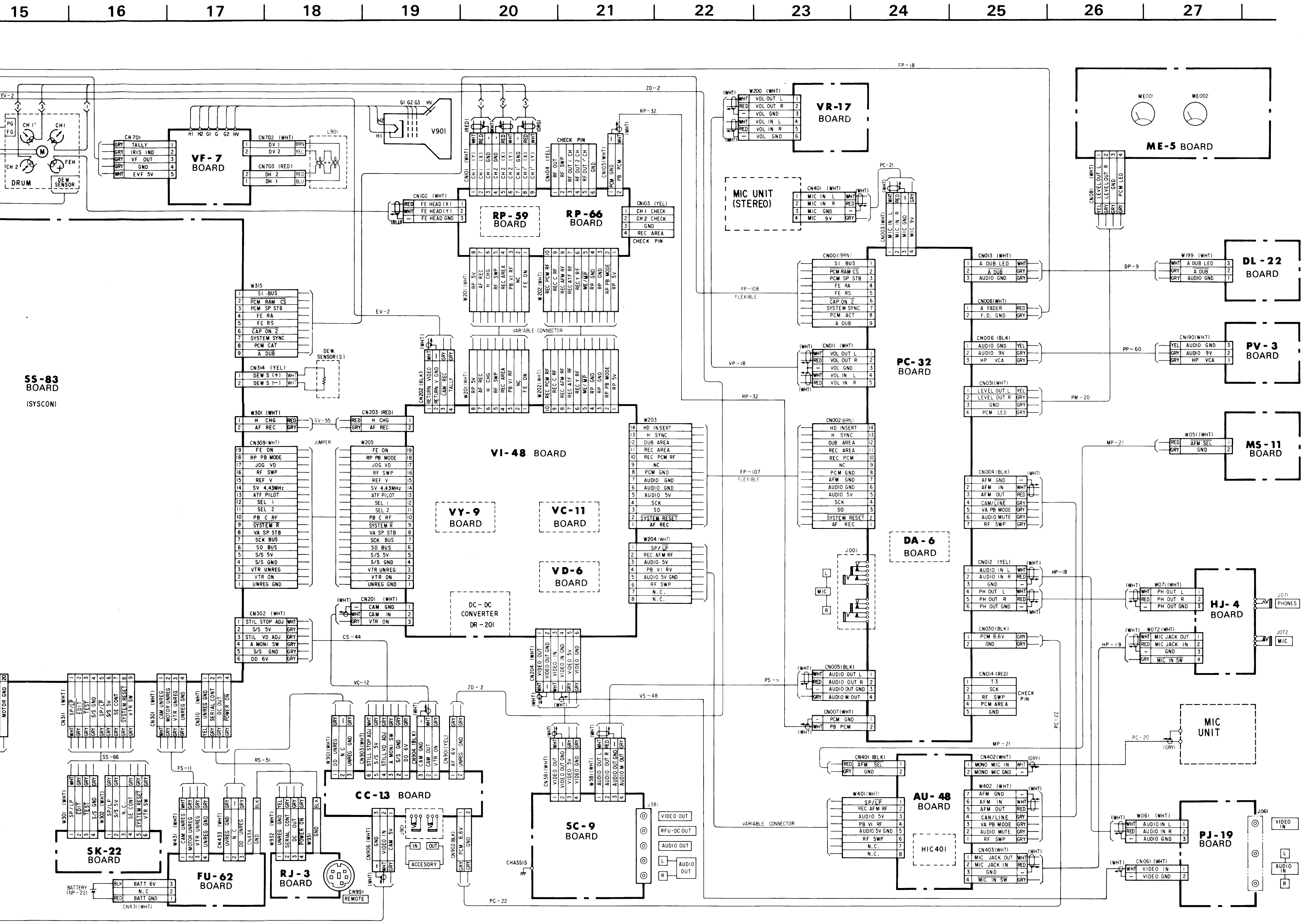

SS-83 BOARD (See Page 149, 160)
FU-62 BOARD (See Page 159)
IC157
5V REG
MODE CONTROL CIRCUIT
CAM POWER ON
VTR POWER ON
EVER 5V
POWER ON
CAM UNREG
MOTOR UNREG
VTR UNREG
CAM POWER SW
S/S 5V
F432
F433
F431
F434
DD UNREG
BATT 6V
BATTERY
SC-9 BOARD (See Page 139)
VIDEO 5V
J381 RF DC OUT
VI-48 BOARD (See Page 140)
DR201
DC-DC CONVERTER
VIDEO 5V
AUDIO 5V
SS 5V
VIDEO CIRCUIT
VTR ON
VTR UNREG
MECANISM CONTROL
PC-32 BOARD (See Page 175)
DA-6 BOARD (See Page 203)
PCM AUDIO CIRCUIT
IC016
EXPANSION PORT
CG-2 BOARD (See Page 115)
CHARACTOR GENERATOR
S802 FOCUS PUSH AUTO
S801 FOCUS
AUTO
MANUAL
AU-48 BOARD (See Page 182)
FM AUDIO CIRCUIT
RP-66 BOARD (See Page 129)
REC/PB AMP
R/P 5V
STEREO MIC UNIT
MIC
PV-3 BOARD (See Page 179)
HEAD PHONE VOLUME
AUDIO
IC012 (1/2)
IC004 (1/2)
4.7V REG
BUFFER
AUDIO INPUT/OUTPUT CIRCUIT
AUDIO 4.7V
PCM 8.6V
CONTROL MOTOR DRIVE
REEL SENSOR
MOTOR POWER
SERVO CIRCUIT
SV 5V
L154
RJ-3 BOARD (See Page 159)
DC OUT
POWER ON
CN951 REMOTO
TS-80 BOARD
TAPE TOP SENSOR
(See Page 153)
REG 5.3V
SV 5V
L156
Q180-182
MOTOR POWER REG
RV151
PS151
DD 6V
CC-13 BOARD (See Page 139)
DC-DC CONVERTER
L904
D902
RECT
T901
Q910, 911
SWITCHING
UNREG
L901
IC902
SWITCHING REGULATOR CONTROL
TRIANGLE OSCLLATOR
V REF
Vcc
RV904 PCM 8.6V
L903
D901, L902 C914
FLYWHEEL
Q909
SWITCHING
V REF/2
LINDER VOLTAG LOCK-OUT
PROTECTION LATCH
Q912, D903 PROTECTION DETECT
RV903 AF 6V
DD UNREG
VTR ON
SK-22 BOARD (See Page 167)
DISPLAY & FUNCTION CONTROL
VTR SW
S311 VTR POWER
SV UNREG
DRUM MOTOR DRIVE
CAPSTAN MOTOR DRIVE
CAP Vcc
AF 6V
S/S 5V
CAM 5V
SLOW/STILL TRACKING CONTROL
CAMERA OUT SWITCH

SECTION 4

PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
LD-9 BOARD
AF-44 BOARD
AF-43 BOARD
ZM-6 BOARD
EM-2 BOARD
AW-10 BOARD
DC - DC CONVERTER
ZS-3 BOARD
LI-7 BOARD
GS-4 BOARD
ZOOM SWITCH
S904
DR-45 BOARD
TS-80 BOARD
SS-83 BOARD
(SYSCON)
(SERVO)
FC-15 BOARD
CG-2 BOARD
VC-36 BOARD
VC-37 BOARD
DT-62 BOARD (HIC)
CP-21 BOARD (HIC)
RS-18 BOARD
LS-9 BOARD
MS-4 BOARD
LD-1 BOARD
SK-22 BOARD
SS-66
M904 FOCUS MOTOR
M905 ZOOM MOTOR
S903 END SW
HALL
IRIS MOTOR
M902 CAPSTAN MOTOR
CAPSTAN FG
DRUM
DEW SENSOR
S901 CASSETTE LOCK SW
S902 RECOG SW
PM901 BRAKE SOLENOID
M901 LOADING MOTOR
C902
M903 CONT MOTOR
D901
BATTERY (NP-22)
CHECK PIN
FLEXIBLE
JUMPER
ZZ-3
ZD-2
FZ-1
FZ-2
PF-18
ZV-1
CV-13
VF-17
EV-2
DS-32
FS-16
FD-19
FD-19
VE-10
ED-2
VD-12
VA-12
VC-13
VC-20
CZ-1
CB-9
FP-19
CO-3
LM-2
FS-16


15
16
17
18
19
20
21
22
23
24
25
26
27
DRUM
DEW SENSOR
VF-7 BOARD
V901
RP-59 BOARD
RP-66 BOARD
VR-17 BOARD
MIC UNIT (STEREO)
ME-5 BOARD
SS-83 BOARD
(SYSCON)
DEW SENSOR(S)
VI-48 BOARD
VY-9 BOARD
VC-11 BOARD
VD-6 BOARD
DC-DC CONVERTER DR-201
PC-32 BOARD
DA-6 BOARD
DL-22 BOARD
PV-3 BOARD
MS-11 BOARD
HJ-4 BOARD
PHONES
MIC
MIC UNIT
SK-22 BOARD
FU-62 BOARD
RJ-3 BOARD
CN951 REMOTE
CC-13 BOARD
ACCESORY
CHASSIS
SC-9 BOARD
VIDEO OUT
RFU-DC OUT
AUDIO OUT
AU-48 BOARD
HIC401
PJ-19 BOARD
VIDEO IN
AUDIO IN
BATTERY (NP-22)
VARIABLE CONNECTOR

PRECAUTIONS FOR REPLACEMENT OF CCD IMAGER BLOCK

- With a pair of IC101 (CCD imager) on the VC-36 complate board and IC002 (corrector ROM) on the DT-62 complete board, it is used a repair part of the CCD imager block.
  Since corrector ROM IC is manufactured to match the CCD imager, replacement of a single unit of the CCD imager corrector ROM cannot be allowed.
- When both a CCD imager and the corrector ROM replace both the CCD imager and the corrector ROM, when a corrector ROM is not mounted on the service set, install a corrector ROM which is supplied anew.
- IC101 (CCD imager) is not mounted on the VC-36 complete board to be supplied as a repair part, and IC002 (corrector ROM) is not mounted on the DT-62 complete board to be supplied as a repair part. When the respective boards are replaced, remove the respective ICs from the old boards and install them to the new ones respectively.
- After the CCD imager block has been replaced, perform the entire adjustments of the camera section.
- CCD imager is structurally in case of being broken down by static electricity. For this reason, take care to handle it as well as MOS IC. Moreover, care should be taken for dust not to be stuck on the light reseiving section and for strong light not to get into there.

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note (Printed Wiring Board)

- ○— : indicates a lead wire mounted on the component side.
- ●— : indicates a lead wire mounted on the conductor side.
- ⊗ : Through hole.
- ▨ : Pattern from the side which enables seeing.
- ▨ : Pattern of the rear side.

- The ● number is the reference number in the waveform diagram.
- Digital transistor (VC-36: Q110, 143) transistor with resistors. Refer to the VC-36 board schematic diagrams for digital transistor.

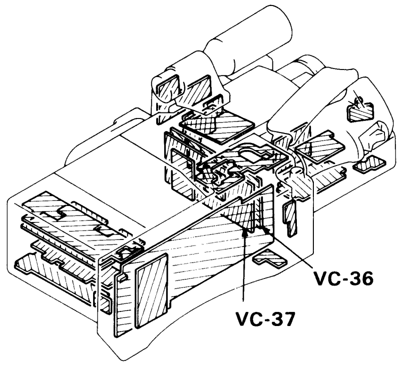
Note

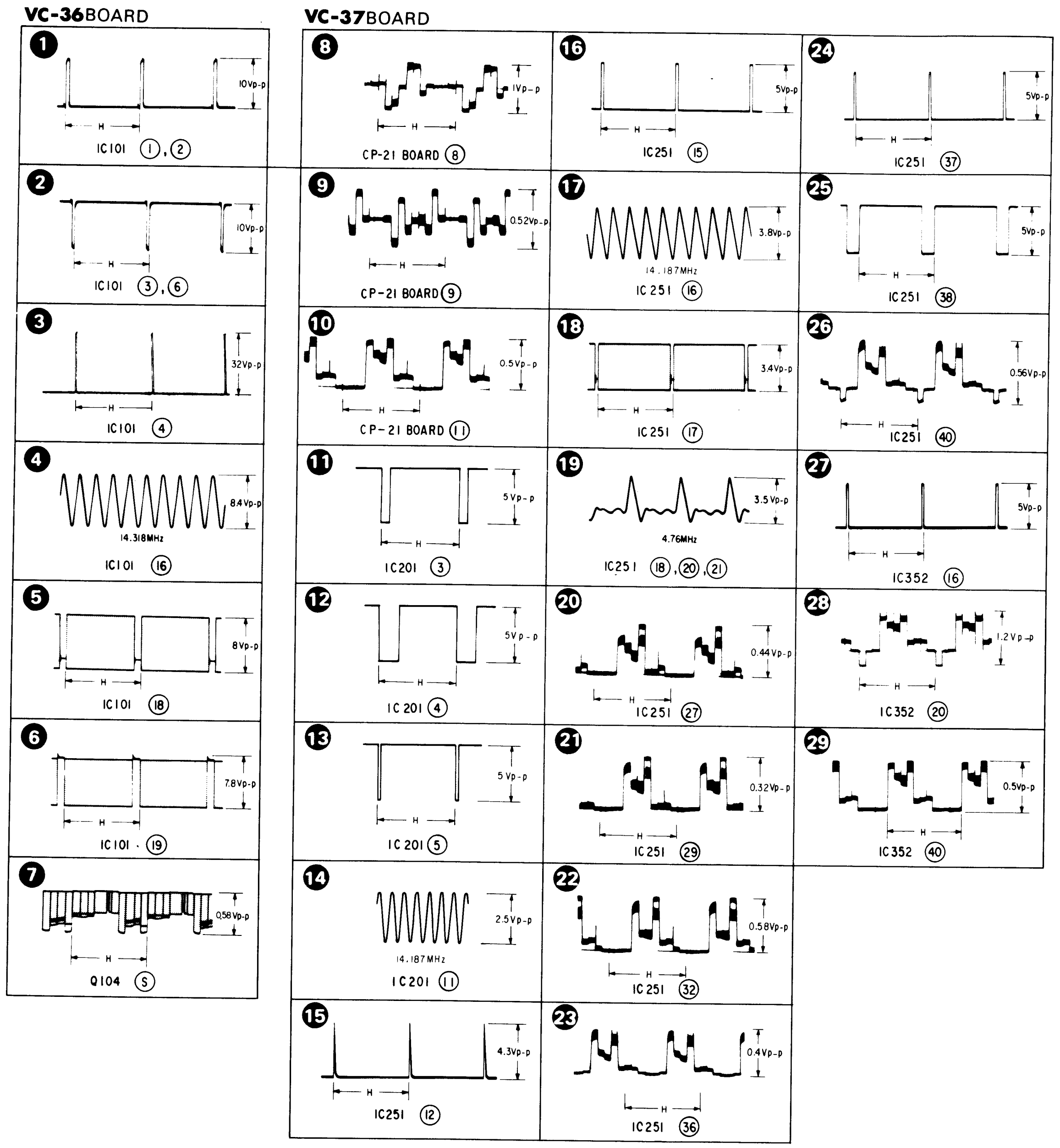
Conductor side: Parts on the conductor side being seen from the conductor are stated.

Component side: Parts on the component side being seen from the component are stated.

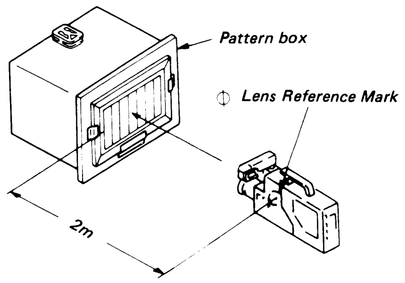
Regarding color indication of pattern

- * Pattern being seen in the state from the surface side are indicated in gray pattern.
- * Pattern being seen in the state of the rear surface side is indicated in green pattern.





1. Connection


Pattern box
Lens Reference Mark
2m

2. Adjust the distance so that the output w form of Fig. a and the Fig. b can be obtain.

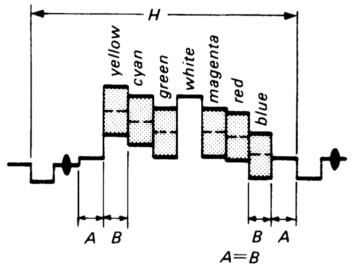


Fig. a Camera output waveform of TP345 on VC-37 board.

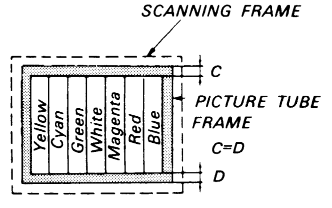

SCANNING FRAME
Yellow
Cyan
Green
White
Magenta
Red
Blue
C
PICTURE TUBE FRAME
C=D
D

Fig. b Picture of TV monitor screen

Note (Schematic Diagram)

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors are in μF unless otherwise noted. pF: $\mu\mu$F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, chip resistor are 1/10W unless otherwise noted.
  kΩ : 1000Ω, MΩ : 1000kΩ.
- All variable and semi-fixed resistors have characteristics curve B, unless otherwise noted.
- : nonflammable resistor.
- : fusible resistor.
- ▭ : panel disignation.
- ▭ : adjustment for repair.
- ▬ : B + line.
- Measuring conditions of voltage value and waveform
  (1) The subject is color bar of pattern box.
  (2) Voltage are DC between ground and measurement point. (The tester used is the digital multimeter DC10MΩ)
- ⇨ indicates the I/O direction of B lines (+, −).
- The ● number is the reference number in the waveform diagram.

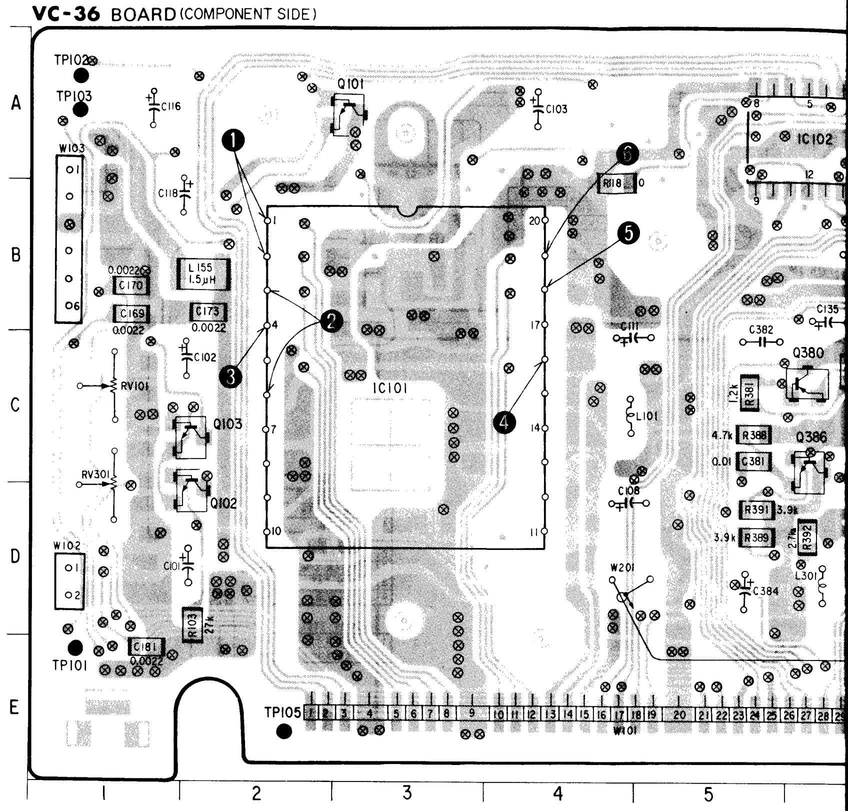
When indicating parts by reference number, please include the board name.

VC-36 (SHUTTER CONTROL, CCD IMAGER, AGC/IRIS MEMORY), VC-37 (AGC/IRIS CONTR

— Ref. No. VC-36, VC-37 BOARDS: 1000 series —

VC-36 BOARD

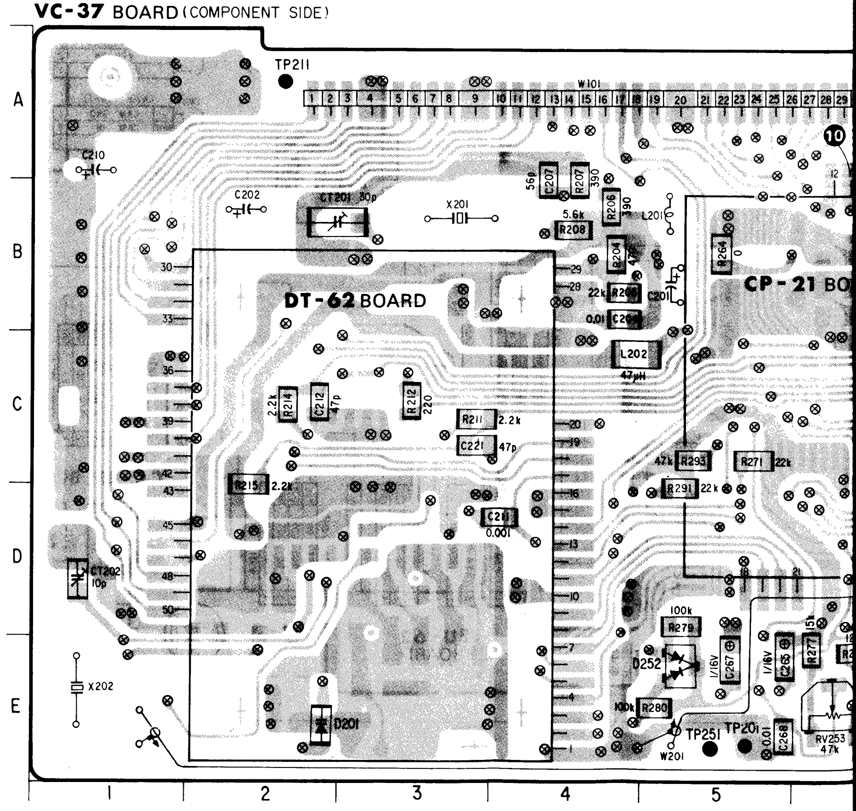
CN101	A-8
CN102	E-9
CN103	A-10
D101	B-21
D102	B-22
D103	A-20
D104	A-20
D105	A-18
D106	B-18
D107	A-18
D131	E-14
D132	D-16
D133	D-15
IC101	C-3
IC102	A-6
IC103	D-9
IC104	C-15
IC105	C-8
IC301	D-6
Q101	A-3
Q102	D-2
Q103	C-2
Q104	D-20
Q105	A-19
Q106	A-19
Q107	A-21
Q108	B-21
Q110	A-18
Q121	A-14
Q132	B-9
Q133	B-16
Q136	C-17
Q137	C-18
Q138	B-17
Q139	C-7
Q143	B-16
Q144	C-16
Q301	D-17
Q302	D-16
Q303	C-17
Q304	C-17
Q305	C-7
Q306	C-7
Q307	D-7
Q308	D-8
Q380	C-6
Q381	C-18
Q382	D-19
Q383	C-19
Q384	C-19
Q386	C-6
Q387	D-19
RV101	C-1
RV301	C-1
TP101	E-1
TP102	A-1
TP103	A-1
TP104	E-7
TP105	E-2
W102	D-1
W103	B-1
W104	D-10


VC-36 BOARD (COMPONENT SIDE)
A
B
C
D
E
1
2
3
4
5
TP102
TP103
TP101
TP105
W102
W103
W101
W201
Q101
Q102
Q103
Q380
Q386
IC101
IC102
RV101
RV301
L155 1.5μH
C170
C169
C173
C102
C103
C116
C118
C108
C135
C381
C382
C384
R118
R381
R388
R389
R391
L101
L301

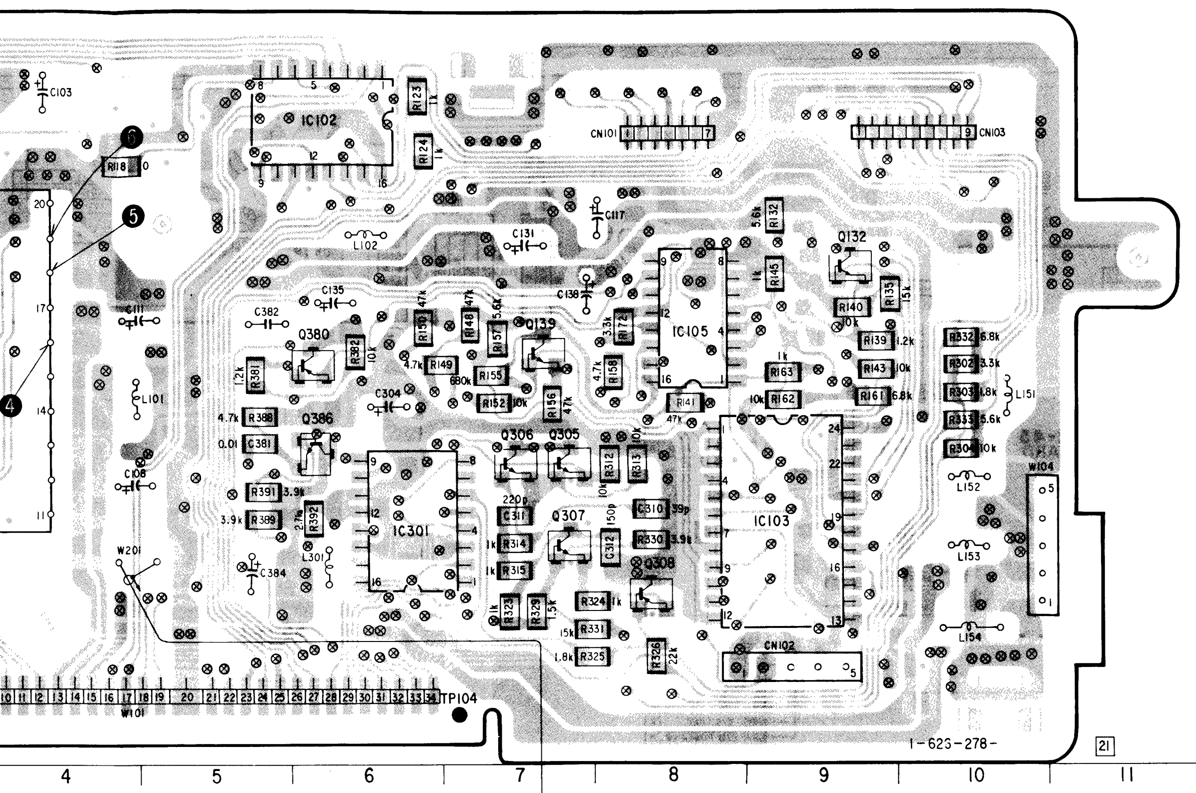
Be sure to always read "Precautions for replacement block" in page 100 when replacing the VC-36 compl 62 complete board, and CCD imager block (IC101 board and IC002 on the DT-62 board).

VC-37 BOARD

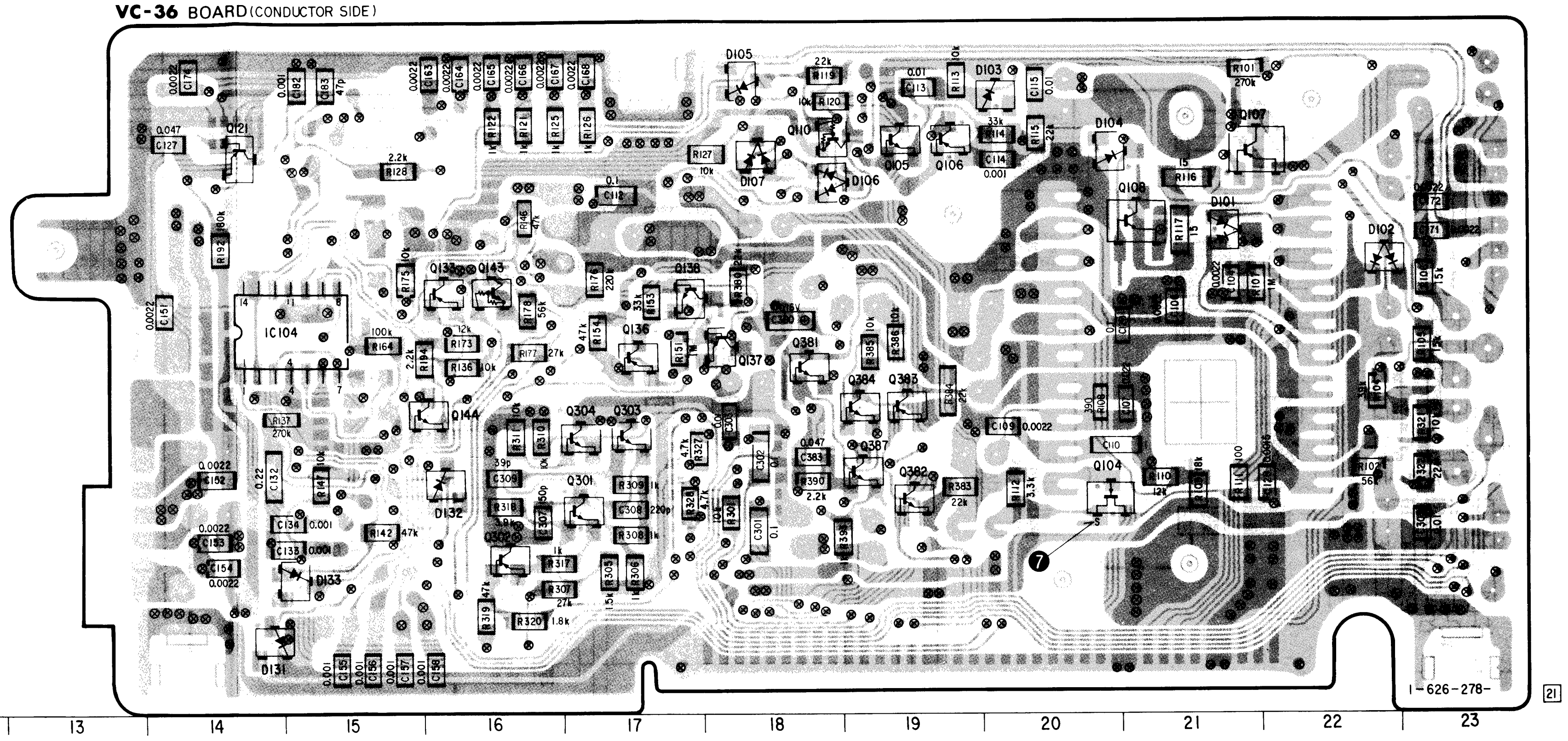
CN201	B-10
CN202	E-8
CT201	B-2
CT202	D-1
D201	E-2
D251	C-10
D252	E-5
IC201	C-20
IC251	D-17
IC352	D-9
Q201	B-19
Q202	B-19
Q203	D-21
Q258	C-16
Q259	C-16
Q260	B-16
Q261	B-16
Q263	B-17
Q342	E-9
Q348	B-13
Q349	D-13
Q350	D-13
Q351	B-9
Q352	B-9
Q353	B-14
RV252	E-6
RV253	E-6
RV254	B-8
RV255	B-8
RV341	C-10
RV342	D-10
RV343	D-10
RV344	E-10
RV345	E-10
RV346	D-10
RV347	D-10
TP201	E-5
TP210	A-7
TP211	A-2
TP251	E-5
TP252	A-8
TP253	A-8
TP254	A-8
TP341	A-9
TP342	A-8
TP343	B-10
TP344	A-10
TP345	B-10


VC-37 BOARD (COMPONENT SIDE)
A
B
C
D
E
1
2
3
4
5
TP211
W101
DT-62 BOARD
CP-21 BO
C210
C202
CT201 30p
CT202 10p
X201
X202
D201
D252
R207
R208
R204
R206
R214
R212
R211 2.2k
C221 47p
R215 2.2k
C218 0.001
L202 47μH
R293
R291
R271
R279
R280
TP251
TP201
W201
RV253 47k

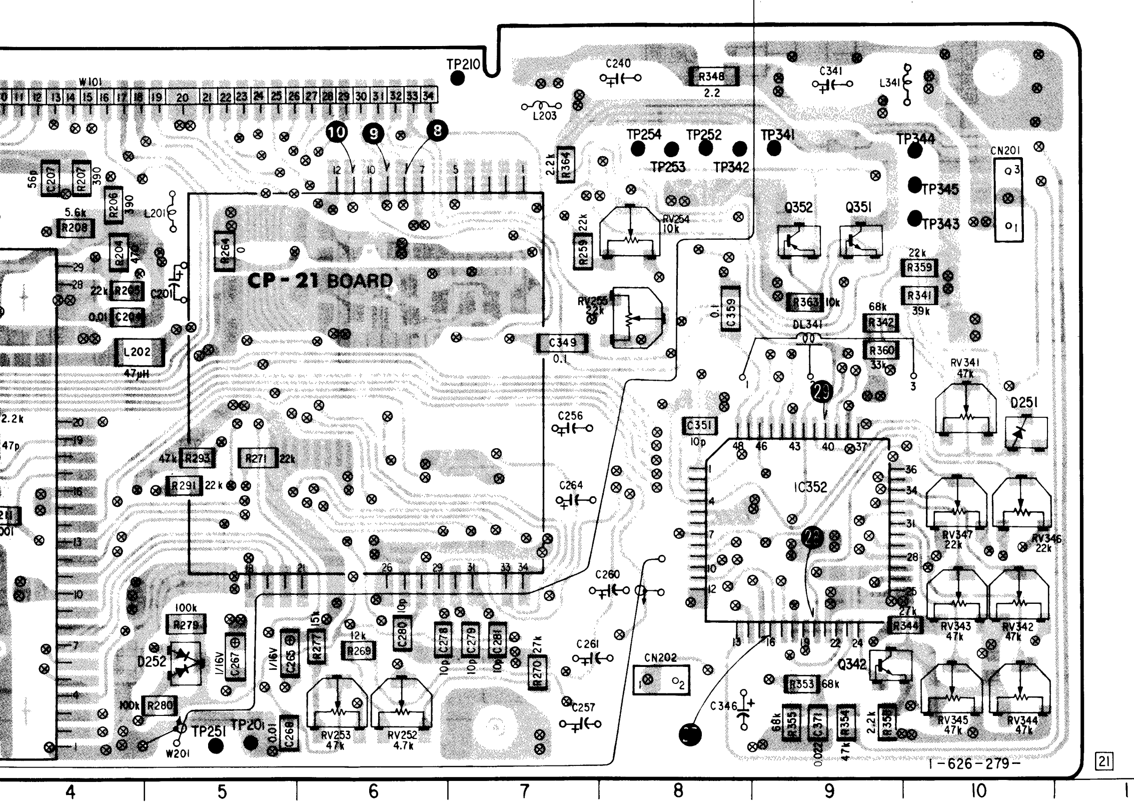
Y), VC-37 (AGC/IRIS CONTROL, SYNC GENERATOR, ENCODER) PRINTED WIRING BOARD


IC102
IC105
IC103
IC301
CN101
CN102
CN103
W101
W104
W201
TP104
1-623-278-
21
4
5
6
7
8
9
10

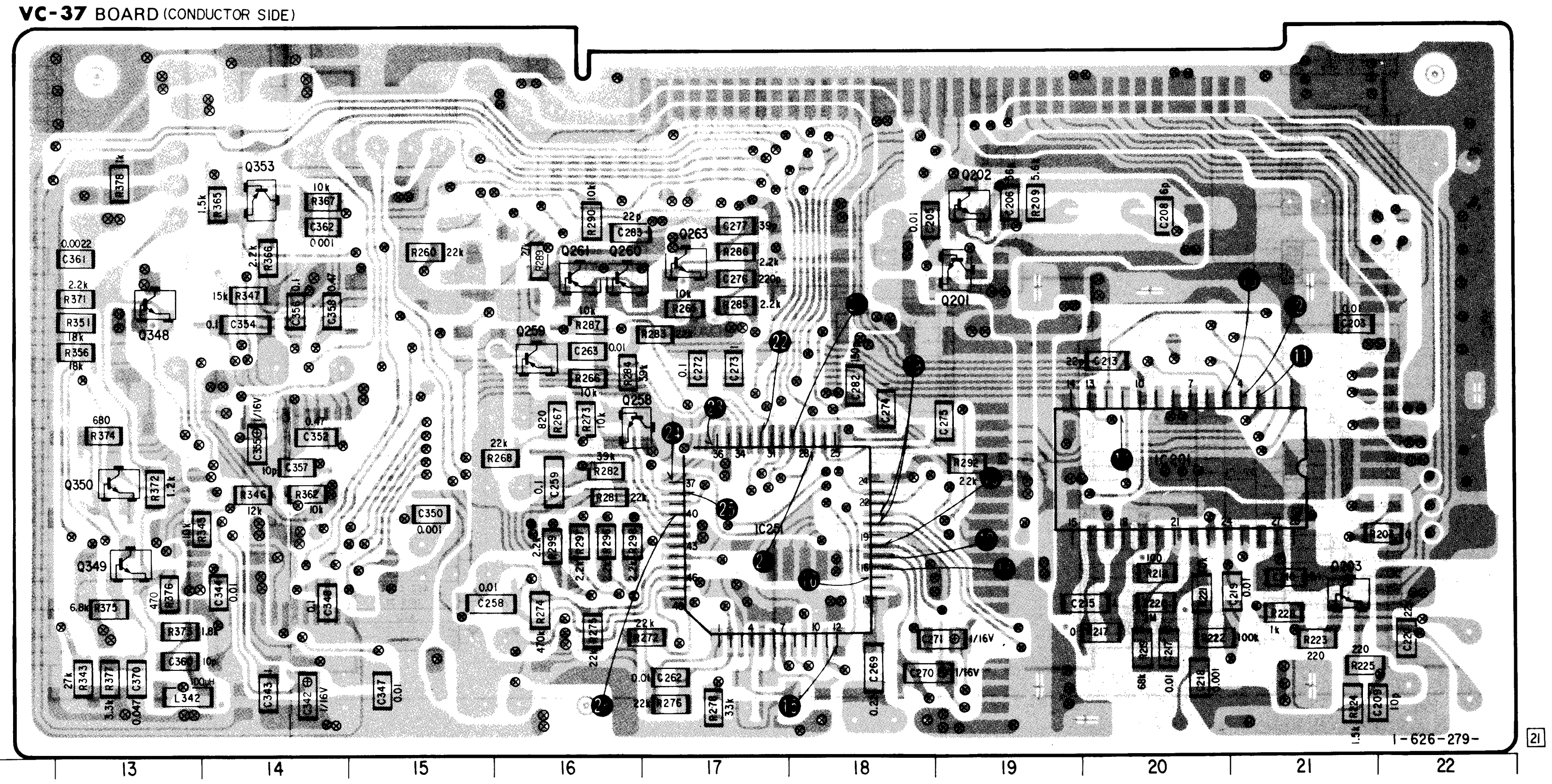
VC-36 BOARD (CONDUCTOR SIDE)


IC104
1-626-278-
21
11
12
13
14
15
16
17
18
19
20
21
22
23

ys read "Precautions for replacement of CCD imager
100 when replacing the VC-36 complete board, DT-
oard, and CCD imager block (IC101 on the VC-36
2 on the DT-62 board).

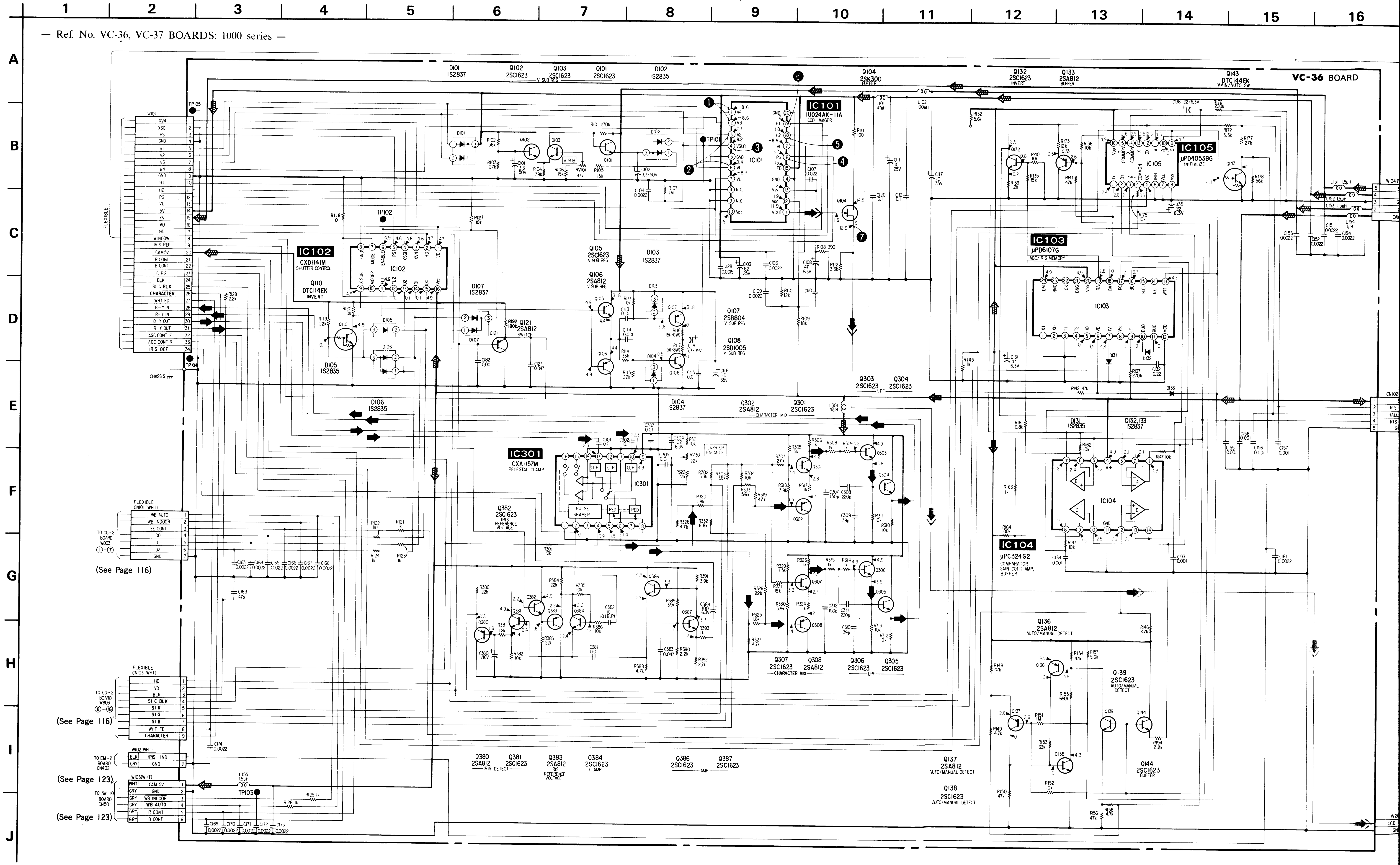

CP-21 BOARD
IC352
W101
W201
TP210
TP201
TP251
TP252
TP253
TP254
TP341
TP342
TP343
TP344
TP345
CN201
CN202
1-626-279-
21
4
5
6
7
8
9
10

VC-37 BOARD (CONDUCTOR SIDE)

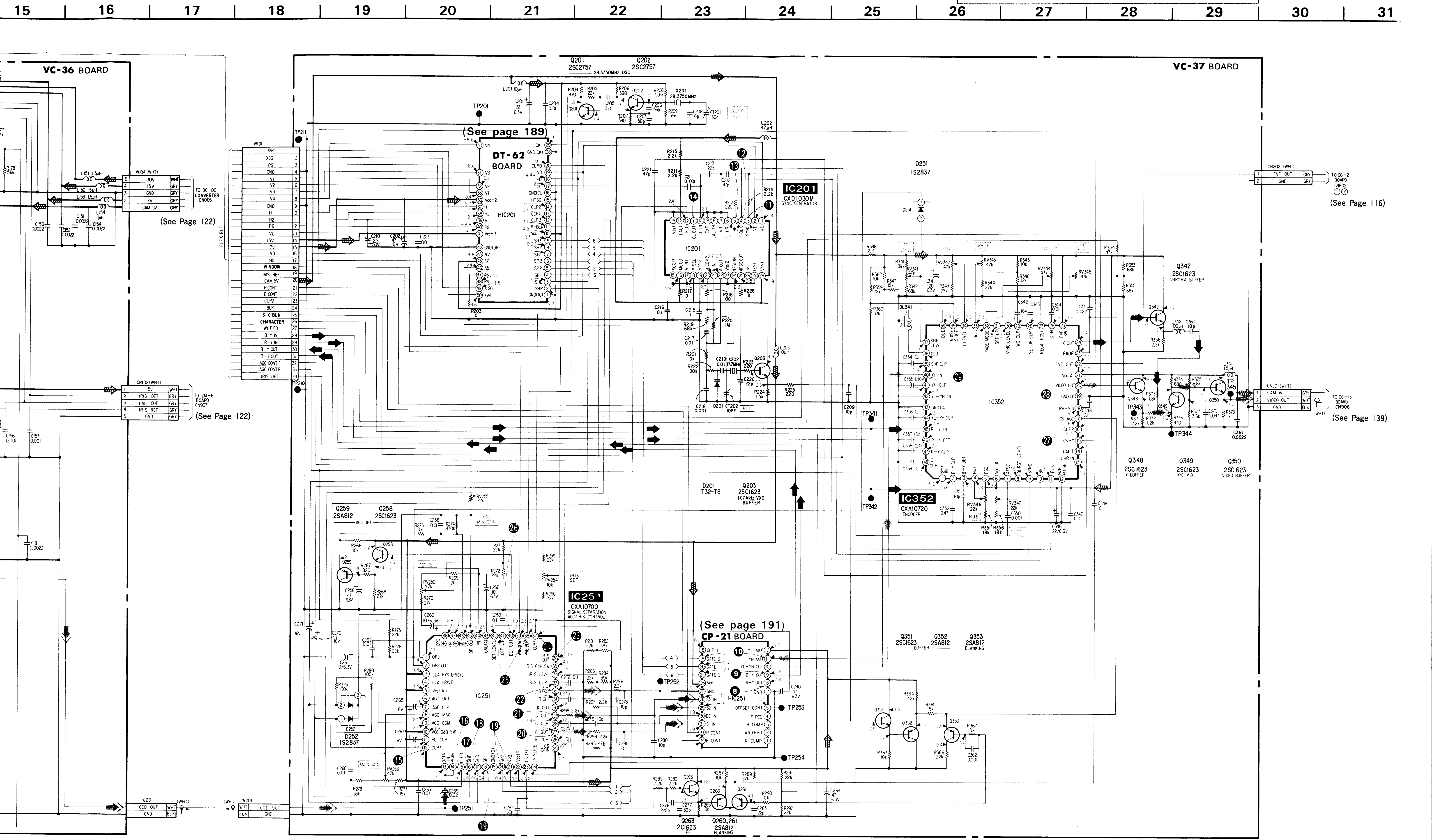

IC201
1-626-279-
21
11
12
13
14
15
16
17
18
19
20
21
22

VC-36 (SHUTTER CONTROL, CCD IMAGER, AGC/IRIS MEMORY), VC-37 (AGC/IRIS CONTROL, SYNC GENERATOR, ENCODER) SCHEMATIC DIAGRAM

— Ref. No. VC-36, VC-37 BOARDS: 1000 series —


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
VC-36 BOARD
IC101
IU024AK-11A
CCD IMAGER
IC102
CXD1141M
SHUTTER CONTROL
IC103
μPD6107G
AGC/IRIS MEMORY
IC104
μPC324G2
COMPARATOR
GAIN CONT. AMP,
BUFFER
IC105
μPD4053BG
INITIALIZE
IC301
CXA1157M
PEDESTAL CLAMP
D101
1S2837
Q102
2SC1623
Q103
2SC1623
V SUB REG
Q101
2SC1623
D102
1S2835
Q104
2SK300
BUFFER
Q132
2SC1623
INVERT
Q133
2SA812
BUFFER
Q143
DTC144EK
MAIN/AUTO SW
Q110
DTC114EK
INVERT
D107
1S2837
Q121
2SA812
SWITCH
D105
1S2835
D106
1S2835
Q105
2SC1623
V SUB REG
Q106
2SA812
V SUB REG
D103
1S2837
Q107
2SB804
V SUB REG
Q108
2SD1005
V SUB REG
D104
1S2837
Q302
2SA812
Q301
2SC1623
CHARACTER MIX
Q303
2SC1623
Q304
2SC1623
LPF
D131
1S2835
D132,133
1S2837
Q382
2SC1623
IRIS
REFERENCE
VOLTAGE
Q307
2SC1623
Q308
2SA812
CHARACTER MIX
Q306
2SC1623
Q305
2SC1623
LPF
Q136
2SA812
AUTO/MANUAL DETECT
Q139
2SC1623
AUTO/MANUAL
DETECT
Q144
2SC1623
BUFFER
Q137
2SA812
AUTO/MANUAL DETECT
Q138
2SC1623
AUTO/MANUAL DETECT
Q380
2SA812
IRIS DETECT
Q381
2SC1623
Q383
2SA812
IRIS
REFERENCE
VOLTAGE
Q384
2SC1623
CLAMP
Q386
2SC1623
Q387
2SC1623
AMP
W101
XV4
XSG1
PS
GND
V1
V2
V3
V4
GND
H1
H2
PG
VL
15V
7V
VD
HD
WINDOW
IRIS REF
CAM5V
R CONT
B CONT
CLP 2
BLK
SI C BLK
CHARACTER
WHT FD
B-Y IN
R-Y IN
B-Y OUT
R-Y OUT
AGC CONT F
AGC CONT R
IRIS DET
FLEXIBLE
TP105
TP104
TP102
TP101
TP103
CHASSIS
FLEXIBLE
CN101(WHT)
WB AUTO
WB INDOOR
EE CONT
D0
D1
D2
GND
TO CG-2
BOARD
WB03
①-⑦
(See Page 116)
FLEXIBLE
CN103(WHT)
HD
VD
BLK
SI C BLK
SI R
SI G
SI B
WHT FD
CHARACTER
TO CG-2
BOARD
WB03
⑧-⑯
(See Page 116)
W102(WHT)
BLK IRIS IND
GRY GND
TO EM-2
BOARD
CN402
(See Page 123)
W103(WHT)
WHT CAM 5V
GRY GND
GRY WB INDOOR
GRY WB AUTO
GRY R CONT
GRY B CONT
TO AW-10
BOARD
CN501
(See Page 123)
L155
15μH
W104
CN102
IRIS
HALL
IRIS
W2
CCD
PULSE
SHAPER
CLP
PED
CARRIER
BALANCE
L101
47μH
L102
100μH
L151 1.5μH
L152 15μH
L153 15μH
L154
1μH
L301
47μH

Be sure to always read "Precautions for replacement of CCD imager block" in page 100 when replacing the VC-36 complete board, DT-62 complete board, and CCD imager block (IC101 on the VC-36 board and IC002 on the DT-62 board).


15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
VC-36 BOARD
W104 (WHT)
30V
15V
GND
7V
CAM 5V
TO DC-DC CONVERTER CN005
(See Page 122)
L151 1.5μH
L152 1.5μH
L153 1.5μH
CN102 (WHT)
5V
IRIS DET
HALL OUT
IRIS REF
GND
TO ZM-6 BOARD CN907
(See Page 122)
FLEXIBLE
W101
XV4
XSG1
PS
GND
V1
V2
V3
V4
GND
H1
H2
PG
VL
15V
7V
VD
HD
WINDOW
IRIS REF
CAM 5V
R CONT
B CONT
CLP2
BLK
SIC BLK
CHARACTER
WHT FD
B-Y IN
R-Y IN
B-Y OUT
R-Y OUT
AGC CONT F
AGC CONT R
IRIS DET
TP211
TP210
TP201
Q201 2SC2757
Q202 2SC2757
28.3750MHz OSC
X201 28.3750MHz
(See page 189)
DT-62 BOARD
HIC201
VC-37 BOARD
IC201
CXD1030M
SYNC GENERATOR
D201 1T32-T8
Q203 2SC1623 17.7MHz VXO BUFFER
X202 17.7MHz
D251 1S2837
IC352
CXA1072Q
ENCODER
TP341
TP342
TP343
TP344
TP345
Q342 2SC1623 CHROMA BUFFER
Q348 2SC1623 Y BUFFER
Q349 2SC1623 Y/C MIX
Q350 2SC1623 VIDEO BUFFER
CN202 (WHT)
EVF OUT
GND
TO CG-2 BOARD CN802
(See Page 116)
CN201 (WHT)
CAM 5V
VIDEO OUT
GND
TO CC-13 BOARD CN906
(See Page 139)
Q259 2SA812
Q258 2SC1623
AGC DET
IC251
CXA1070Q
SIGNAL SEPARATION AGC/IRIS CONTROL
D252 1S2837
(See page 191)
CP-21 BOARD
HIC251
TP252
TP253
TP254
TP251
Q351 2SC1623 BUFFER
Q352 2SA812
Q353 2SA812 BLANKING
Q263 2C1623 LPF
Q260,261 2SA812 BLANKING
W201
CCD OUT
GND
(WHT)

● Signal path

➡ :REC CHROMA SIGNAL

➡ :REC Y SIGNAL

➡ :REC Y & CHROMA SIGNAL

Note (Printed Wiring Board)

- ○— : indicates a lead wire mounted on the component side.
- ●— : indicates a lead wire mounted on the conductor side.
- ⊗ : Through hole.
- ▨ : Pattern from the side which enables seeing.
- ▨ : Pattern of the rear side.
- Digital transistor (FC-15: Q702, 703, 704, 705, 709, 712, 713, 715, CG-2: Q806) transistor with resistors.
  Refer to the FC-15, CG-2 boards schematic diagrams for digital transistor.

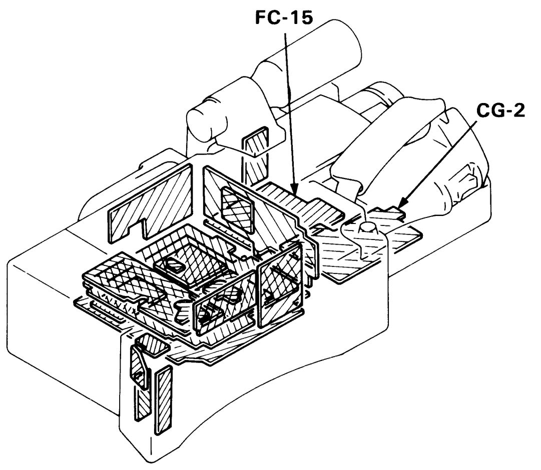
Note

Conductor side:	Parts on the conductor side being seen from the conductor are stated.
Component side:	Parts on the component side being seen from the component are stated.

Regarding color indication of pattern

* Pattern being seen in the state from the surface side are indicated in gray pattern.

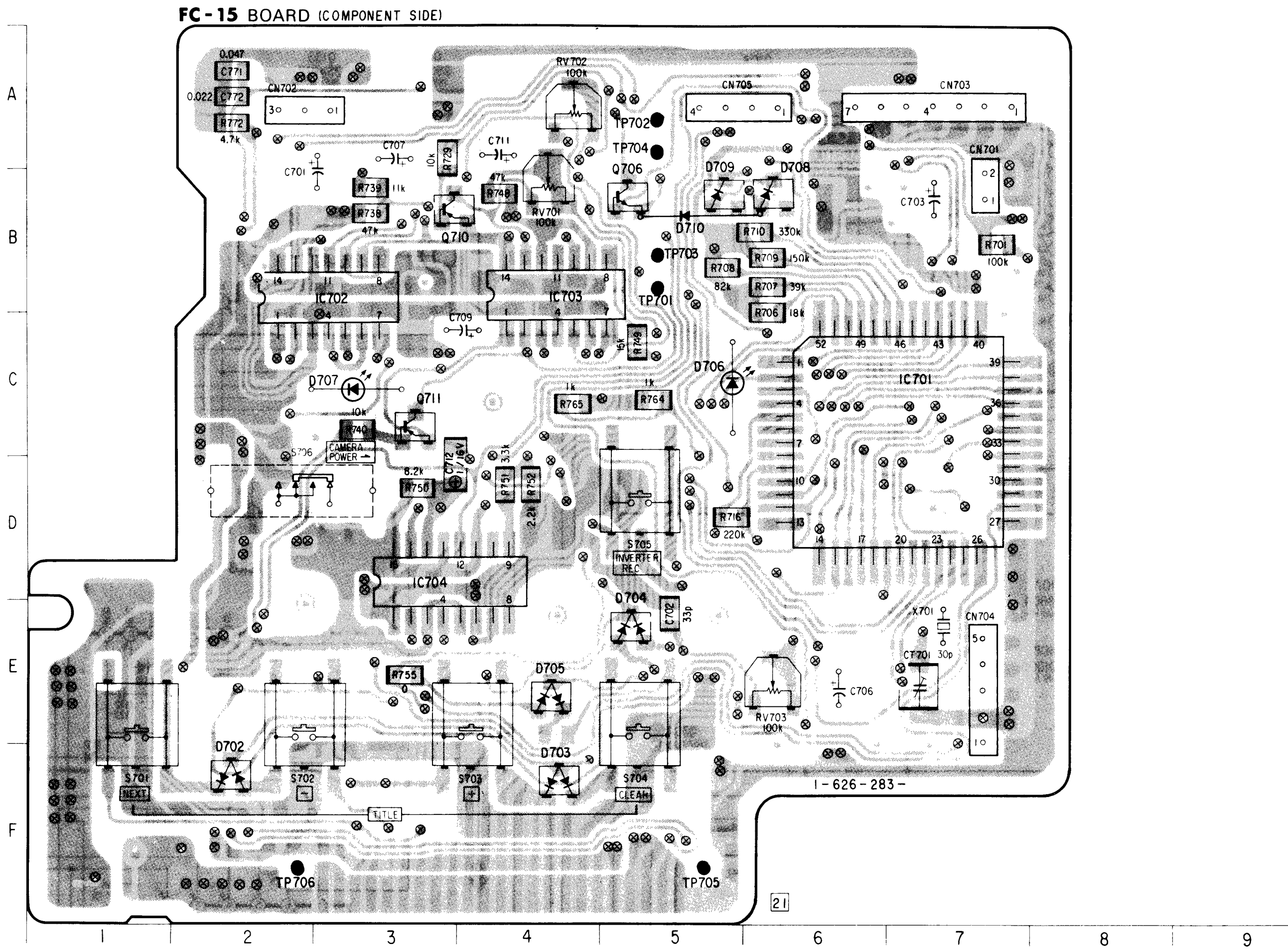
* Pattern being seen in the state of the rear surface side is indicated in green pattern.

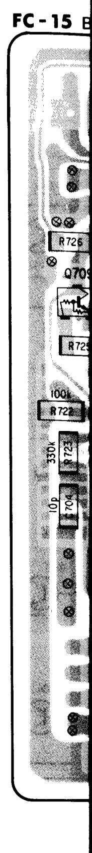


FC-15 (CAMERA SYSTEM CONTROL, CAMERA FUNCTION KEY MATRIX), CG-2 (CHARACTER GENERATOR, CAMERA FUN

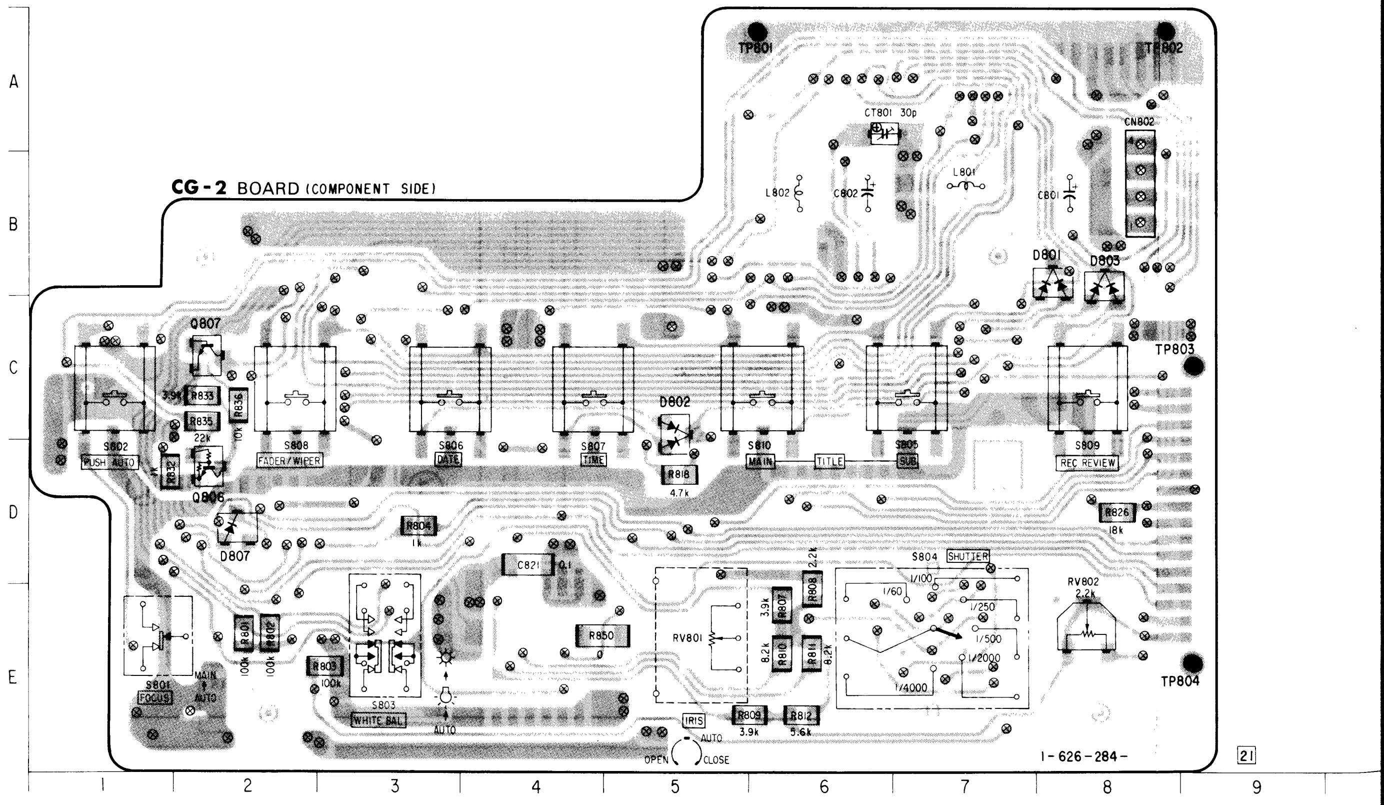
— Ref. No. FC-15, CG-2 BOARDS: 1000 series —

FC-15 BOARD	
CN701	A-7
CN702	A-2
CN703	A-7
CN704	E-7
CN705	A-5
CT701	E-7
D701	B-14
D702	F-2
D703	F-4
D704	E-5
D705	E-4
D706	C-5
D707	C-3
D708	B-6
D709	A-5
D710	B-5
IC701	C-6
IC702	B-2
IC703	B-4
IC704	D-3
Q701	D-11
Q702	B-11
Q703	B-11
Q704	E-10
Q705	E-11
Q706	B-5
Q708	D-10
Q709	B-10
Q710	B-3
Q711	C-3
Q712	F-15
Q713	E-11
Q714	E-12
Q715	C-15
Q718	E-15
Q719	E-14
Q720	E-15
Q771	B-15
RV701	B-4
RV702	A-4
RV703	E-6
TP701	B-5
TP702	A-5
TP703	B-5
TP704	A-5
TP705	F-5
TP706	F-2


FC-15 BOARD (COMPONENT SIDE)
A
B
C
D
E
F
1
2
3
4
5
6
7
8
9
CN701
CN702
CN703
CN704
CN705
IC701
IC702
IC703
IC704
RV701
RV702
RV703
TP701
TP702
TP703
TP704
TP705
TP706
S701 NEXT
S702
S703
S704 CLEAR
S705 INVERTER REC
CAMERA POWER
TITLE
1-626-283-
21



CG-2 BOARD	
CN802	B-8
CT801	A-6
D801	B-8
D802	C-5
D803	B-8
D805	E-12
D806	E-12
D807	D-2
IC801	D-13
IC802	D-17
IC803	C-13
IC804	C-17
IC805	D-15
IC806	C-15
IC807	E-15
Q802	E-11
Q803	C-11
Q804	D-11
Q805	C-18
Q806	D-2
Q807	C-2
RV801	E-5
RV802	E-8
TP801	A-6
TP802	A-8
TP803	C-9
TP804	E-9


CG-2 BOARD (COMPONENT SIDE)
A
B
C
D
E
1
2
3
4
5
6
7
8
9
TP801
TP802
TP803
TP804
CT801 30p
CN802
S802 PUSH AUTO
S808 FADER/WIPER
S806 DATE
S807 TIME
S810 MAIN
TITLE
S805 SUB
S809 REC REVIEW
S801 FOCUS
S803 WHITE BAL
IRIS
OPEN
AUTO
CLOSE
S804 SHUTTER
1/60
1/100
1/250
1/500
1/2000
1/4000
RV801
RV802 2.2k
1-626-284-
21

FC-15 (CAMERA SYSTEM CONTROL, CAMERA FUNCTION KEY MATRIX), CG-2 (CHARACTER GENERATOR, CAMERA FUNCTION SWITCH) PRINTED WIRING BOARD

— Ref. No. FC-15, CG-2 BOARDS: 1000 series —

side.
or side.

12, 713,

or digital

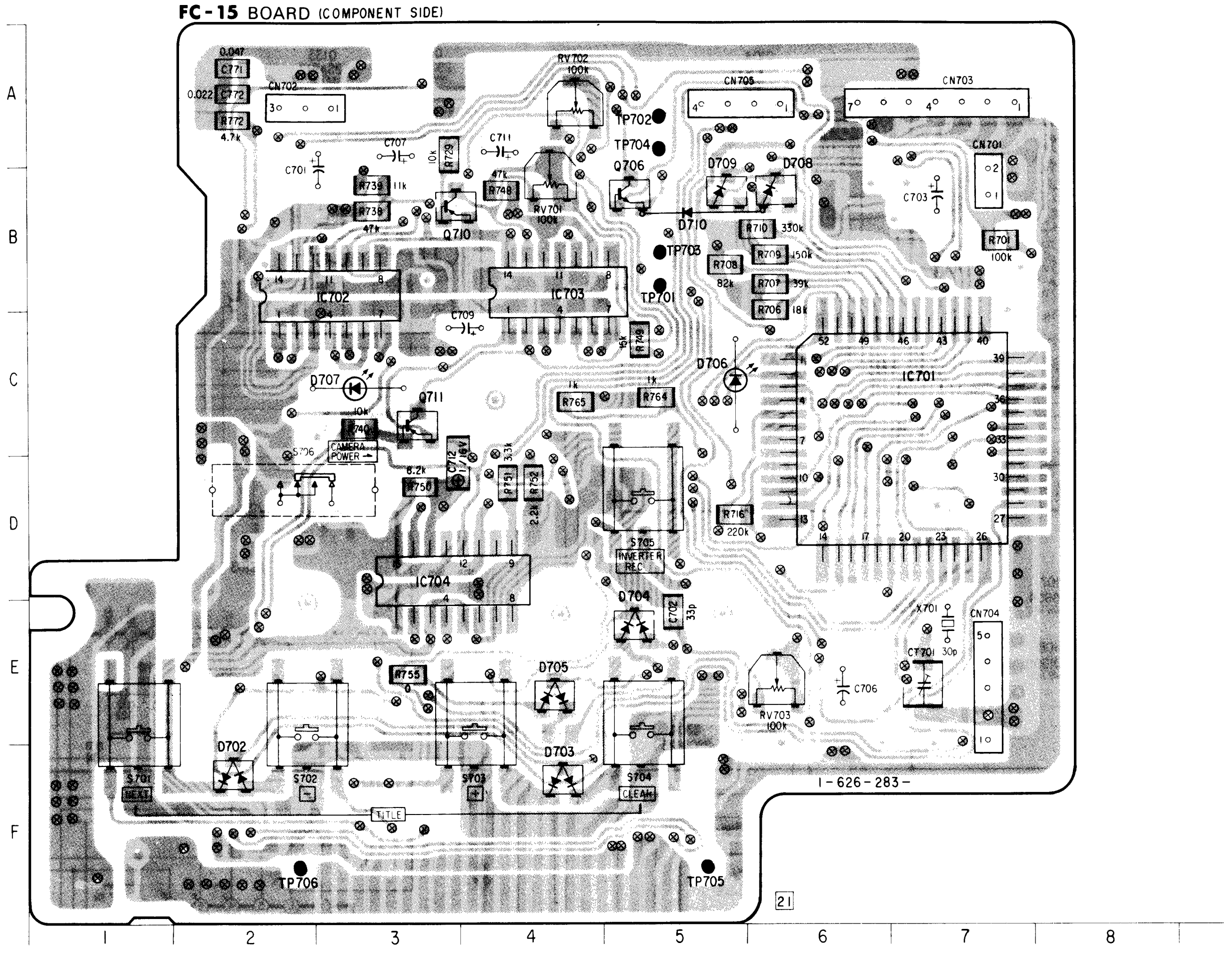
g
d.
g
d.

e

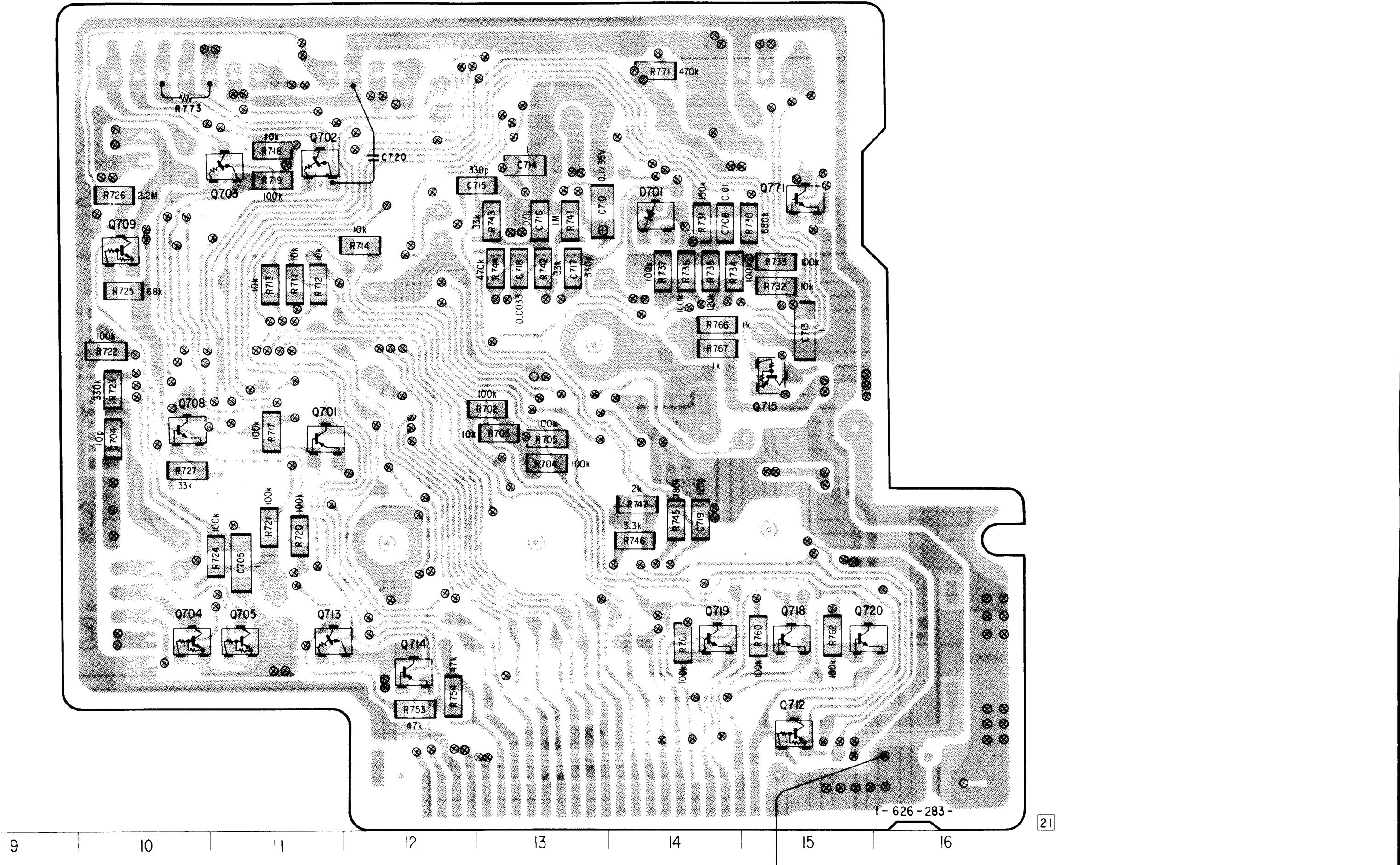
e

FC-15 BOARD	
CN701	A-7
CN702	A-2
CN703	A-7
CN704	E-7
CN705	A-5
CT701	E-7
D701	B-14
D702	F-2
D703	F-4
D704	E-5
D705	E-4
D706	C-5
D707	C-3
D708	B-6
D709	A-5
D710	B-5
IC701	C-6
IC702	B-2
IC703	B-4
IC704	D-3
Q701	D-11
Q702	B-11
Q703	B-11
Q704	E-10
Q705	E-11
Q706	B-5
Q708	D-10
Q709	B-10
Q710	B-3
Q711	C-3
Q712	F-15
Q713	E-11
Q714	E-12
Q715	C-15
Q718	E-15
Q719	E-14
Q720	E-15
Q771	B-15
RV701	B-4
RV702	A-4
RV703	E-6
TP701	B-5
TP702	A-5
TP703	B-5
TP704	A-5
TP705	F-5
TP706	F-2

FC-15 BOARD (COMPONENT SIDE)

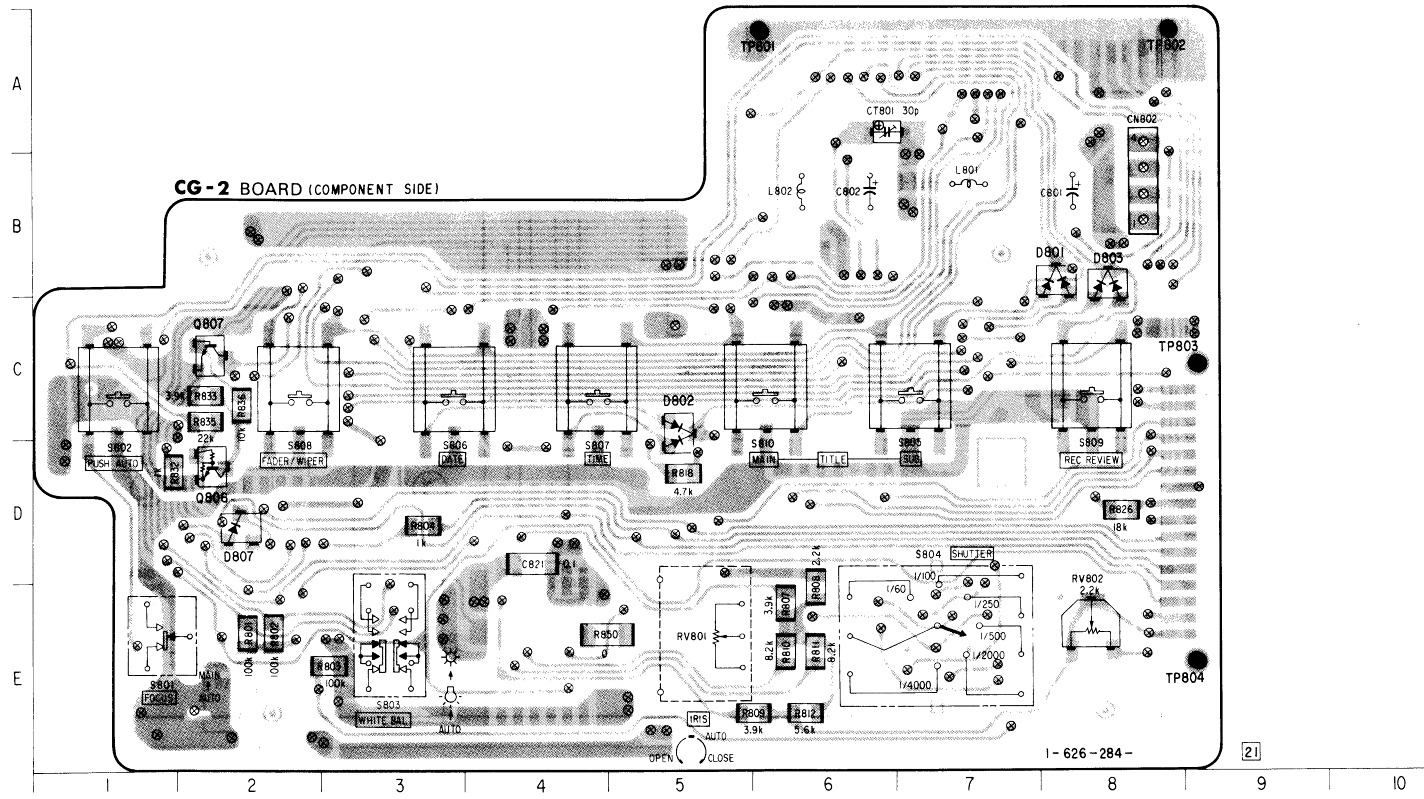

A
B
C
D
E
F
CN701
CN702
CN703
CN704
CN705
IC701
IC702
IC703
IC704
RV701
RV702
RV703
TP701
TP702
TP703
TP704
TP705
TP706
S701 HEAT
S702
S703
S704 CLEAR
S705 INVERTER REC
S706 CAMERA POWER
TITLE
X701
CT701
1-626-283-
21
1
2
3
4
5
6
7
8
9

FC-15 BOARD (CONDUCTOR SIDE)

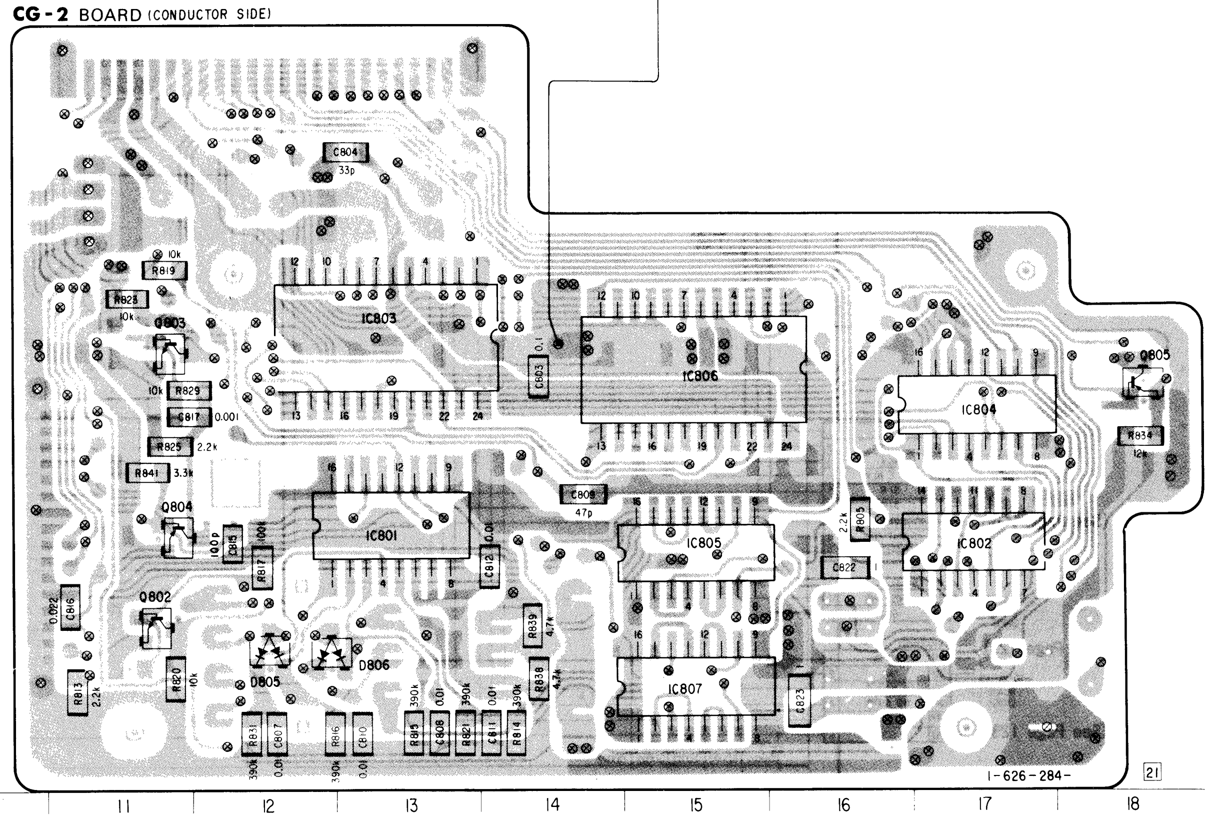

R771 470k
R773
C720
Q703
Q702
Q709
Q708
Q701
Q704
Q705
Q713
Q714
Q715
Q718
Q719
Q720
Q712
Q771
D701
1-626-283-
21
10
11
12
13
14
15
16

CG-2 BOARD	
CN802	B-8
CT801	A-6
D801	B-8
D802	C-5
D803	B-8
D805	E-12
D806	E-12
D807	D-2
IC801	D-13
IC802	D-17
IC803	C-13
IC804	C-17
IC805	D-15
IC806	C-15
IC807	E-15
Q802	E-11
Q803	C-11
Q804	D-11
Q805	C-18
Q806	D-2
Q807	C-2
RV801	E-5
RV802	E-8
TP801	A-6
TP802	A-8
TP803	C-9
TP804	E-9

CG-2 BOARD (COMPONENT SIDE)

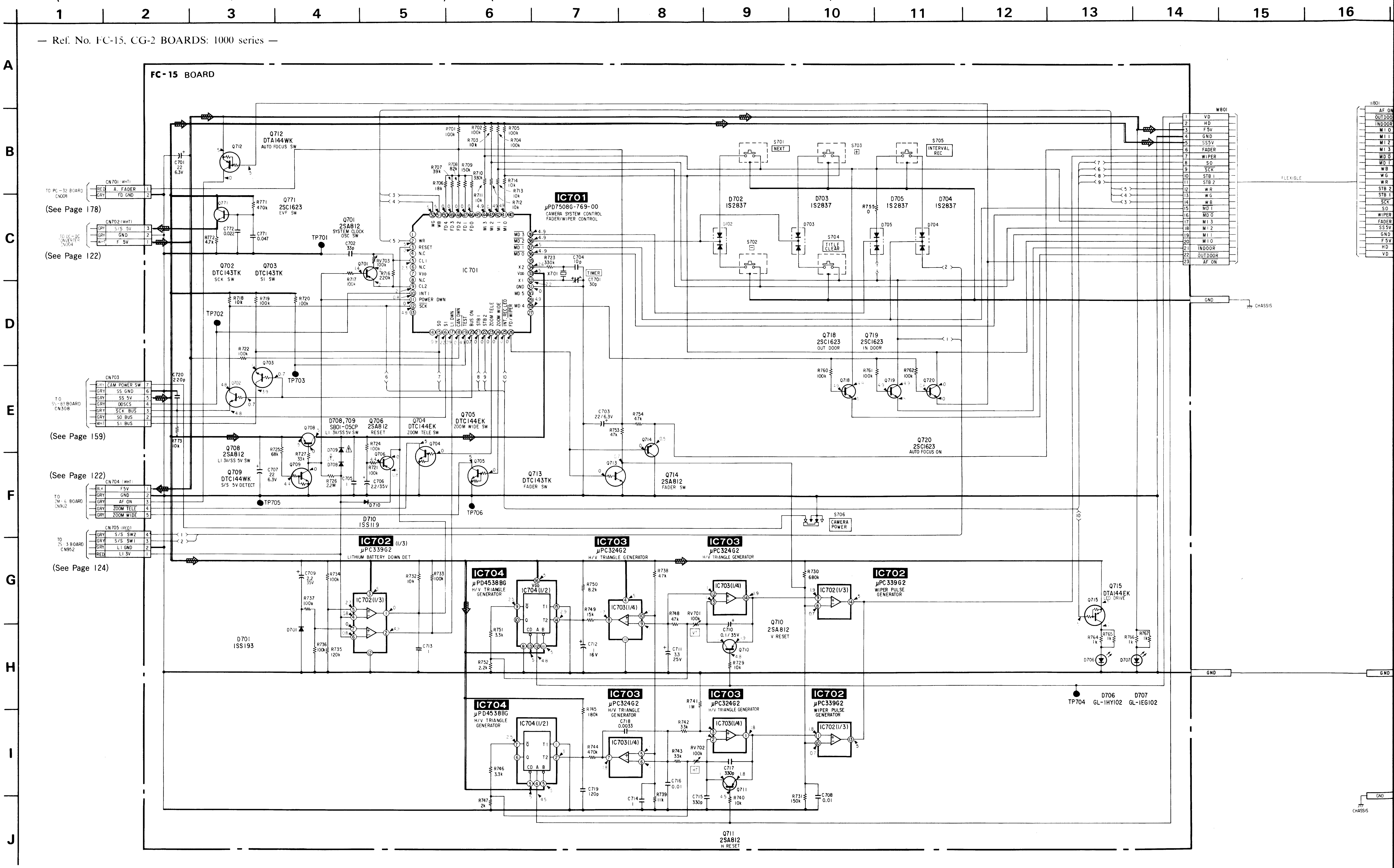

A
B
C
D
E
TP801
TP802
TP803
TP804
CT801 30p
CN802
L801
L802
C801
C802
D801
D803
D802
D807
Q807
Q806
S802 PUSH AUTO
S808 FADER/WIPER
S806 DATE
S807 TIME
S810 MAIN
TITLE
S805 SUB
S809 REC REVIEW
S801 FOCUS
MAIN
AUTO
S803 WHITE BAL
AUTO
S804 SHUTTER
1/60
1/100
1/250
1/500
1/2000
1/4000
RV801
RV802
IRIS
OPEN
AUTO
CLOSE
1-626-284-
21
1
2
3
4
5
6
7
8
9
10

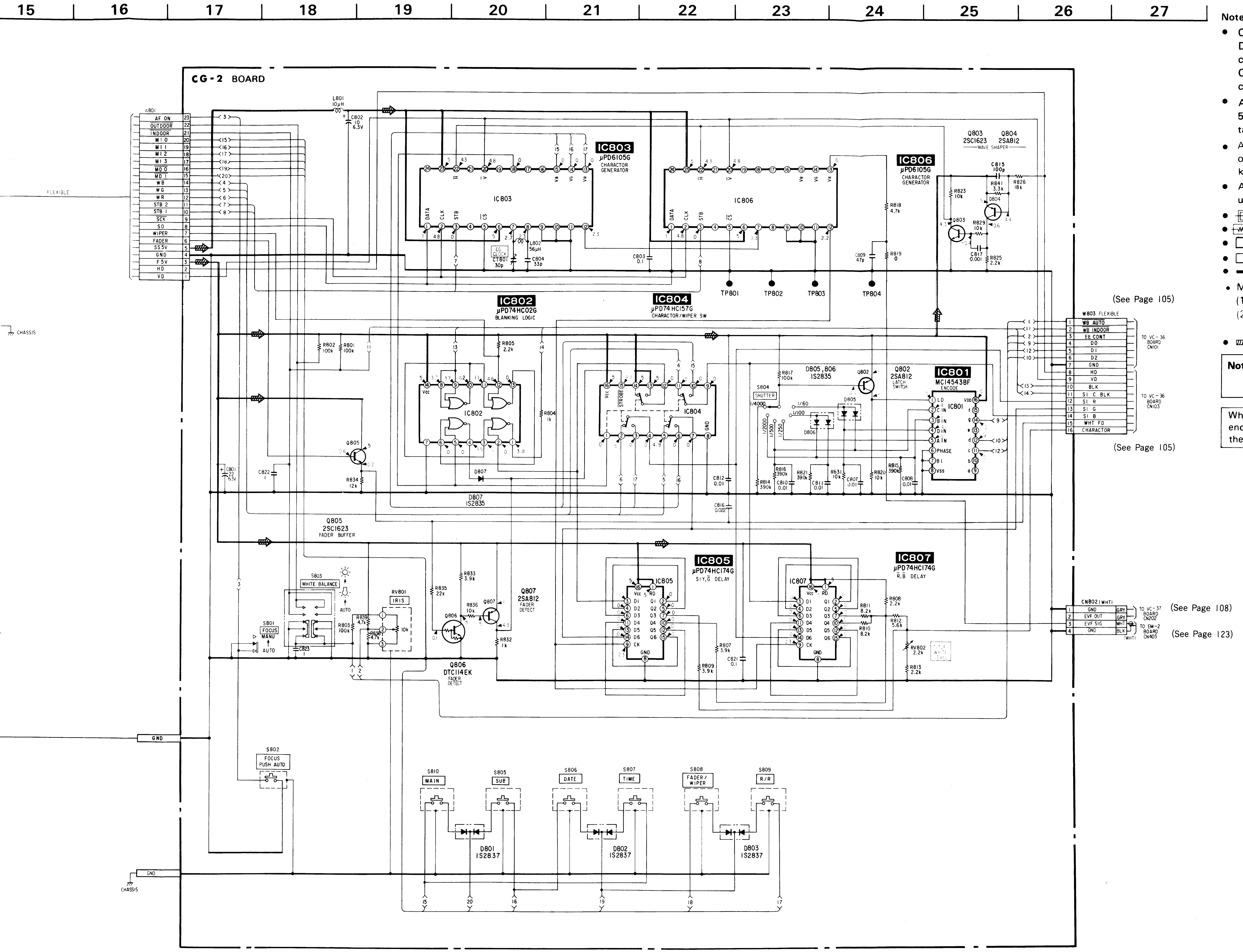
CG-2 BOARD (CONDUCTOR SIDE)


C804 33p
IC803
IC806
IC804
IC801
IC805
IC802
IC807
Q803
Q804
Q802
Q805
D805
D806
1-626-284-
21
11
12
13
14
15
16
17
18

FC-15 (CAMERA SYSTEM CONTROL, CAMERA FUNCTION KEY MATRIX), CG-2 (CHARACTER GENERATOR, CAMERA FUNCTION SWITCH) SCHEMATIC DIAGRAM

— Ref. No. FC-15, CG-2 BOARDS: 1000 series —


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
FC-15 BOARD
TO PC-32 BOARD CN008
(See Page 178)
CN701 (WHT)
A. FADER
FD GND
CN702 (WHT)
S/S 5V
GND
F 5V
(See Page 122)
TO SY-83 BOARD CN308
CN703
CAM POWER SW
SS GND
SS 5V
DDSCS
SCK BUS
SO BUS
SI BUS
(See Page 159)
(See Page 122)
TO ZM-6 BOARD CN902
CN704 (WHT)
F5V
GND
AF ON
ZOOM TELE
ZOOM WIDE
TO ZS-3 BOARD CN952
CN705 (RED)
S/S SW2
S/S SW1
LI GND
LI 3V
(See Page 124)
Q712
DTA144WK
AUTO FOCUS SW
Q771
2SC1623
EVF SW
R771 470k
R772 4.7k
C772 0.022
C771 0.047
C701 22 6.3V
Q701
2SA812
SYSTEM CLOCK OSC SW
TP701
C702 33p
RV703 100k
R716 220k
R717 100k
Q702
DTC143TK
SCK SW
Q703
DTC143TK
SI SW
R718 10k
R719 100k
R720 100k
TP702
R722 100k
TP703
C720 220p
R773 10k
P701 100k
R702 100k
R703 10k
R705 100k
R704 100k
R707 39k
R708 82k
R709 150k
R710 330k
R706 18k
R711 10k
R714 10k
R713 10k
R712 10k
IC701
μPD7508G-769-00
CAMERA SYSTEM CONTROL FADER/WIPER CONTROL
IC 701
WR
RESET
N.C
CL1
N.C
VDD
N.C
CL2
INT1
POWER DWN
SCK
MD 3
MD 2
MD 1
MD 0
X2
VDD
X1
GND
MD 5
MD 4
R723 330k
C704 10p
X701
TIMER
CT701 30p
Q708
2SA812
LI 3V/SS 5V SW
Q709
DTC144WK
S/S 5V DETECT
D708,709
SB01-05CP
LI 3V/SS 5V SW
Q706
2SA812
RESET
Q704
DTC144EK
ZOOM TELE SW
Q705
DTC144EK
ZOOM WIDE SW
R725 68k
R727 33k
R726 2.2M
C707 22 6.3V
R724 100k
R721 100k
C706 2.2/35V
C705
TP705
TP706
D710
1SS119
C703 22/6.3V
R753 47k
R754 47k
Q713
DTC143TK
FADER SW
Q714
2SA812
FADER SW
S701 NEXT
S703
S705 INTERVAL REC
D702 1S2837
D703 1S2837
R755 0
D705 1S2837
D704 1S2837
S702
S704 TITLE CLEAR
Q718
2SC1623
OUT DOOR
Q719
2SC1623
IN DOOR
R760 100k
R761 100k
R762 100k
Q720
2SC1623
AUTO FOCUS ON
S706 CAMERA POWER
W801
VD
HD
F5V
GND
SS5V
FADER
WIPER
SO
SCK
STB 1
STB 2
WR
WG
WB
MD 1
MD 0
MI 3
MI 2
MI 1
MI 0
INDOOR
OUTDOOR
AF ON
GND
CHASSIS
FLEXIBLE
IC702 (1/3)
μPC339G2
LITHIUM BATTERY DOWN DET
C709 2.2 35V
R734 100k
R737 100k
D701
1SS193
R736 100k
R735 120k
R732 10k
R733 100k
C713 1
IC703
μPC324G2
H/V TRIANGLE GENERATOR
IC704
μPD4538BG
H/V TRIANGLE GENERATOR
IC704 (1/2)
R751 3.3k
R752 2.2k
R750 8.2k
R749 15k
C712 1 16V
IC703 (1/4)
R738 47k
R748 47k
RV701 100k
C710 0.1/35V
C711 3.3 25V
R729 10k
Q710
2SA812
V RESET
R730 680k
IC702
μPC339G2
WIPER PULSE GENERATOR
IC702 (1/3)
Q715
DTA144EK
LED DRIVE
R764 1k
R765 1k
R766 1k
R767 1k
D706
GL-1HY102
D707
GL-1EG102
TP704
R745 180k
C718 0.0033
R744 470k
R746 3.3k
R747 2k
C719 120p
R741 1M
R742 33k
R743 33k
RV702 100k
C716 0.01
C714 1
R739 11k
C715 330p
C717 330p
R740 10k
R731 150k
C708 0.01
Q711
2SA812
H RESET


15
16
17
18
19
20
21
22
23
24
25
26
27
CG-2 BOARD
W801
AF ON
OUTDOOR
INDOOR
MI 0
MI 1
MI 2
MI 3
MD 0
MD 1
WB
WG
WR
STB 2
STB 1
SCK
SO
WIPER
FADER
SS5V
GND
F5V
HD
VD
FLEXIBLE
CHASSIS
L801 10μH
C802 10 6.3V
IC803
μPD6105G
CHARACTOR GENERATOR
IC806
μPD6105G
CHARACTOR GENERATOR
DATA
CLK
STB
CS
CG CLOCK
CT801 30p
L802 56μH
C804 33p
C803 0.1
C809 47p
R818 4.7k
R819 0
TP801
TP802
TP803
TP804
Q803 2SC1623
Q804 2SA812
WAVE SHAPER
C815 100p
R841 3.3k
R826 18k
R823 10k
R829 10k
C817 0.001
R825 2.2k
IC802
μPD74HC02G
BLANKING LOGIC
IC804
μPD74HC157G
CHARACTOR/WIPER SW
R802 100k
R801 100k
R805 2.2k
R804 1k
STROBE
Q805
C801 22 6.3V
C822 1
R834 12k
D807
D807 1S2835
Q805 2SC1623 FADER BUFFER
C812 0.01
C816 0.022
S804 SHUTTER
1/4000
1/2000
1/500
1/250
1/100
1/60
R817 100k
D805,806 1S2835
Q802 2SA812 LATCH SWITCH
IC801
MC14543BF
ENCODE
LD
C IN
B IN
D IN
A IN
PHASE
BI
Vss
VDD
R816 390k
R814 390k
C810 0.01
R821 390k
C811 0.01
R631 10k
C807 0.01
R820 10k
R815 390k
C808 0.01
W803 FLEXIBLE
WB AUTO
WB INDOOR
EE CONT
D0
D1
D2
GND
HD
VD
BLK
SI C BLK
SI R
SI G
SI B
WHT FD
CHARACTOR
TO VC-36 BOARD CN101
TO VC-36 BOARD CN103
(See Page 105)
(See Page 105)
S803 WHITE BALANCE
AUTO
S801 FOCUS
MANU
AUTO
RV801 IRIS
R839 4.7k
R838 4.7k
R803 100k
C823 1
R835 22k
R833 3.9k
R836 10k
Q806
Q807
Q807 2SA812 FADER DETECT
R832 1k
Q806 DTC114EK FADER DETECT
IC805
μPD74HC174G
SY,G DELAY
IC807
μPD74HC174G
R,B DELAY
R807 3.9k
C821 0.1
R809 3.9k
R808 2.2k
R811 8.2k
R810 8.2k
R812 5.6k
RV802 2.2k
R813 2.2k
CN802 (WHT)
GND
EVF OUT
EVF SIG
GND
GRY
WHT
BLK
TO VC-37 BOARD CN202
TO EM-2 BOARD CN403
(See Page 108)
(See Page 123)
GND
S802 FOCUS PUSH AUTO
S810 MAIN
S805 SUB
S806 DATE
S807 TIME
S808 FADER/WIPER
S809 R/R
D801 1S2837
D802 1S2837
D803 1S2837

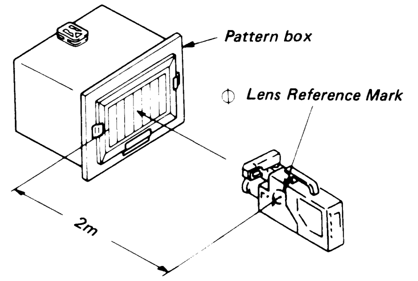
Note (Schematic Diagram)

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors are in μF unless otherwise noted. pF: μμF
  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, chip resistor are 1/10W unless otherwise noted.
  kΩ : 1000Ω, MΩ : 1000kΩ.
- All variable and semi-fixed resistors have characteristics curve B, unless otherwise noted.
- ⊟ : nonflammable resistor.
- ⊟ : fusible resistor.
- ☐ : panel disignation.
- ☐ : adjustment for repair.
- ▬ : B + line.
- Measuring conditions of voltage value and waveform
  (1) The subject is color bar of pattern box.
  (2) Voltage are DC between ground and measurement point.
  (The tester used is the digital multimeter DC10MΩ)
- ⇨ indicates the I/O direction of B lines (+, −).

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

1. Connection


Pattern box
Lens Reference Mark
2m

2. Adjust the distance so that the output w form of Fig. a and the Fig. b can be obtain.

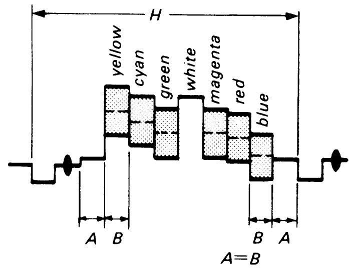

H
yellow
cyan
green
white
magenta
red
blue
A
B
B
A
A=B

Fig. a Camera output waveform of TP345 on VC-37 board.

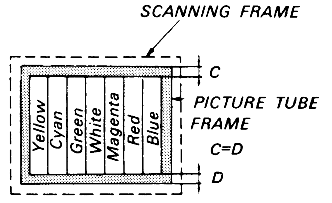
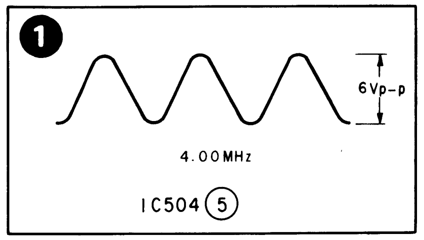

SCANNING FRAME
Yellow
Cyan
Green
White
Magenta
Red
Blue
C
D
PICTURE TUBE FRAME
C=D

Fig. b Picture of TV monitor screen

AF-43 (AUTO FOCUS CONTROL), AF-44 (AUTO FOCUS SENSOR), AW-10 (AUTO WHITEBALANCE), ZM-6 (ZOOM MOTOR DR

— Ref. No. AF-43, AF-44, AW-10, ZM-6, EM-2, GS-4, LD-9, LI-7, ZS-3 BOARDS: 2000 series —

AW-10 BOARD



Note (Printed Wiring Board)

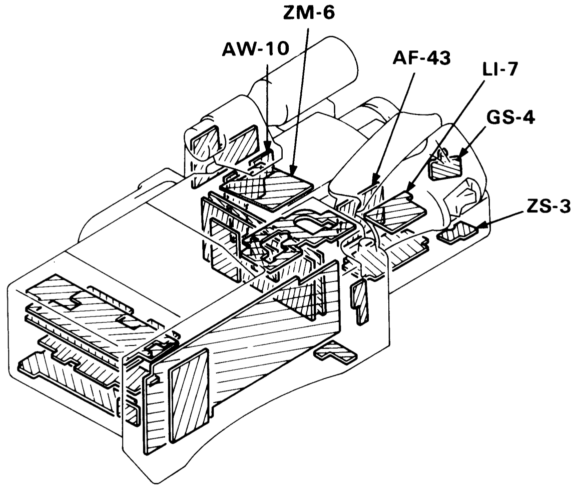
- ○— : indicates a lead wire mounted on the component side.
- ●— : indicates a lead wire mounted on the conductor side.
- ⊗ : Through hole.
- ▨ : Pattern from the side which enables seeing.
- : Pattern of the rear side.
- The ● number is the reference number in the waveform diagram.
- Digital transistor (EM-2: Q414, AW-10: Q501, 502, 503, 504, 505, 506, 507, 508, ZM-6: Q901, 910) transistor with resistors. Refer to the EM-2, AW-10, ZM-6 boards schematic diagrams for digital transistor.

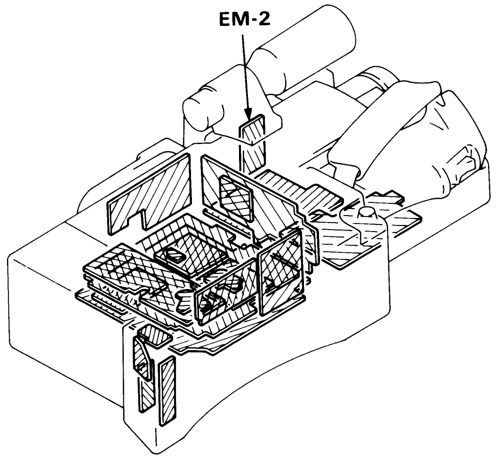
Note

Conductor side:	Parts on the conductor side being seen from the conductor are stated.
Component side:	Parts on the component side being seen from the component are stated.

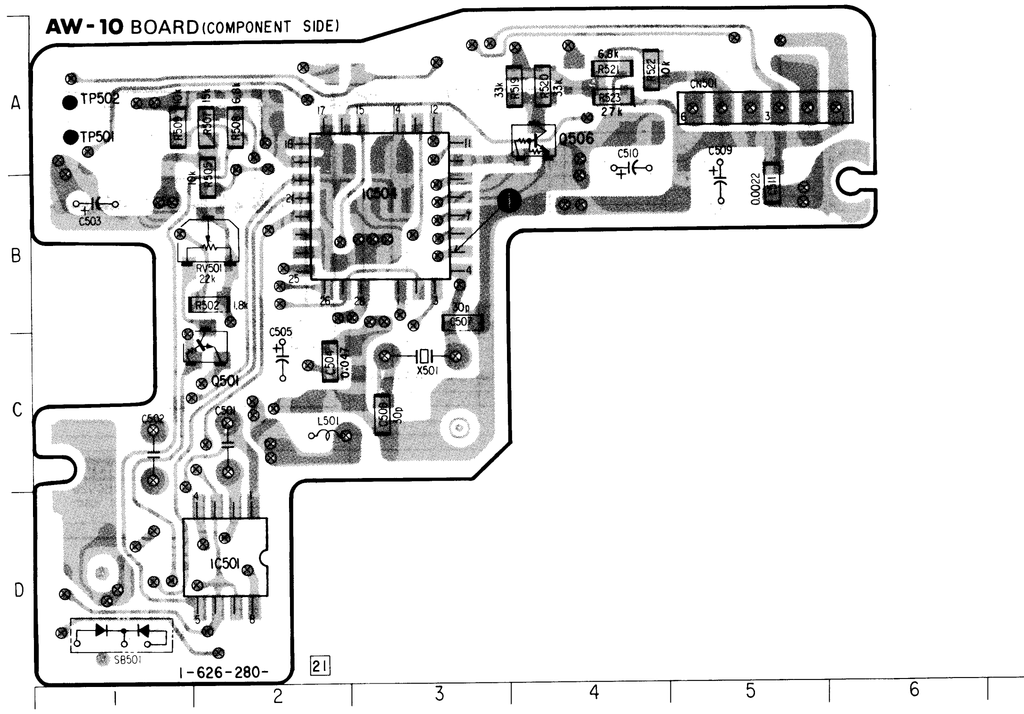
Regarding color indication of pattern

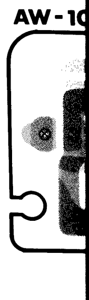
- * Pattern being seen in the state from the surface side are indicated in gray pattern.
- * Pattern being seen in the state of the rear surface side is indicated in green pattern.


ZM-6
AW-10
AF-43
LI-7
GS-4
ZS-3

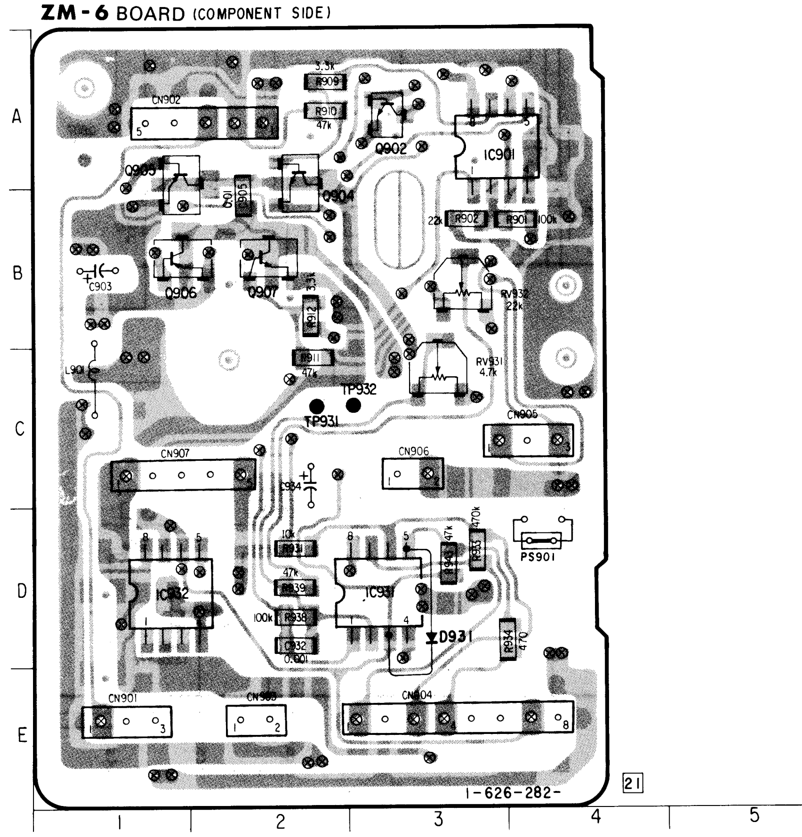


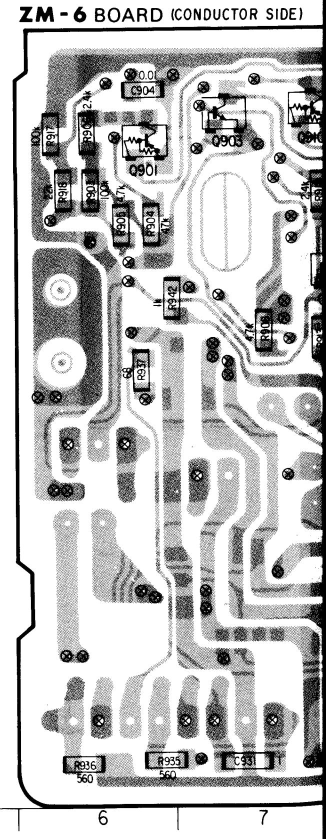
AW-10 BOARD	
CN501	A-5
D501	C-10
IC501	D-2
IC502	A-11
IC503	D-11
IC504	B-3
Q501	C-2
Q502	C-11
Q503	B-10
Q504	B-10
Q505	A-9
Q506	A-4
Q507	A-9
Q508	A-9
RV501	B-2
TP501	A-1
TP502	A-1


AW-10 BOARD (COMPONENT SIDE)
TP502
TP501
IC502
Q506
C510
C509
CN501
C503
RV501
IC504
C505
Q501
X501
L501
IC501
SB501
1-626-280-
21
A
B
C
D
1
2
3
4
5
6
7

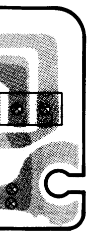


ZM-6 BOARD	
CN901	E-1
CN902	A-1
CN903	E-2
CN904	E-3
CN905	C-4
CN906	C-3
CN907	C-1
D931	D-3
IC901	A-3
IC931	D-3
IC932	D-1
Q901	A-6
Q902	A-3
Q903	A-7
Q904	A-2
Q905	A-1
Q906	B-1
Q907	B-2
Q908	B-8
Q909	B-7
Q910	A-7
RV931	C-3
RV932	B-3
TP931	C-2
TP932	C-3

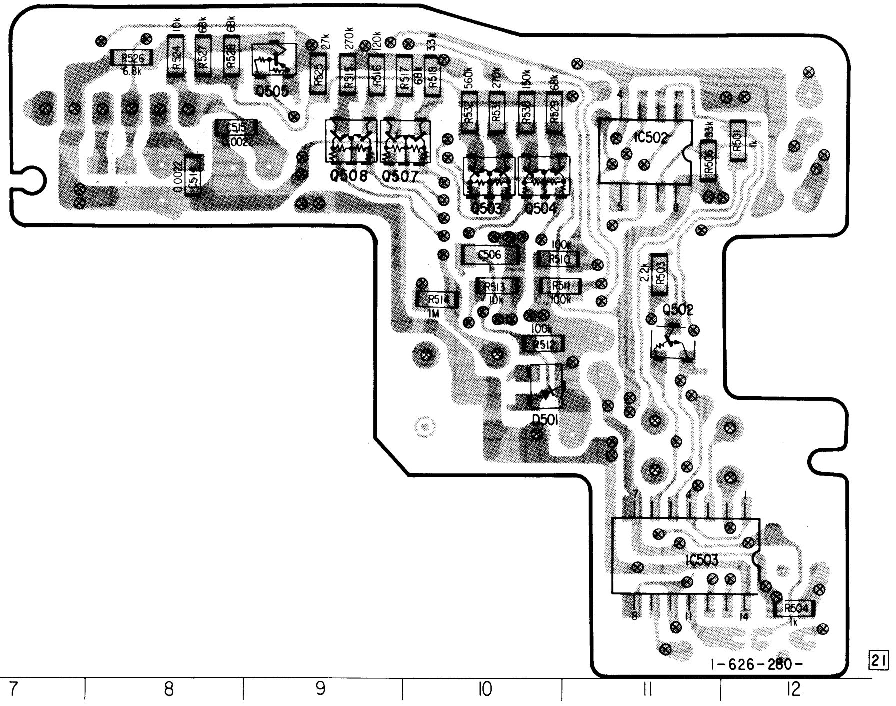

ZM-6 BOARD (COMPONENT SIDE)
CN902
Q905
Q904
Q902
IC901
C903
Q906
Q907
RV932
RV931
TP932
TP931
CN907
CN906
CN905
IC932
IC931
D931
PS901
CN901
CN903
CN904
1-626-282-
21
A
B
C
D
E
1
2
3
4
5
6
7


ZM-6 BOARD (CONDUCTOR SIDE)
C904
Q901
Q903

), ZM-6 (ZOOM MOTOR DRIVE, IRIS CONTROL), EM-2 (VIEW FINDER RELAY), GS-4 (START/STOP SWITCH), ZS-3 (START, STOP/ZOOM SWITCH RELAY), LI-7 (LITHIUM BATTERY STORAGE), LD-9 (INFRARED EMISSION) PRINTED WIRING BOARD

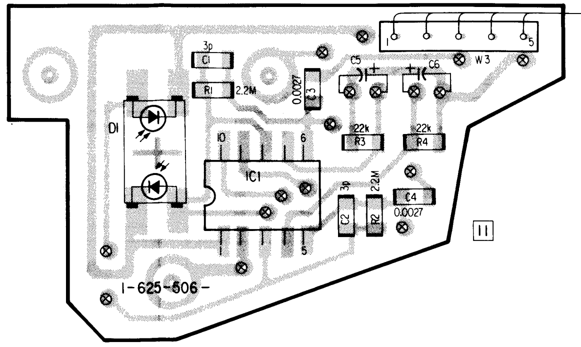


AW-10 BOARD (CONDUCTOR SIDE)

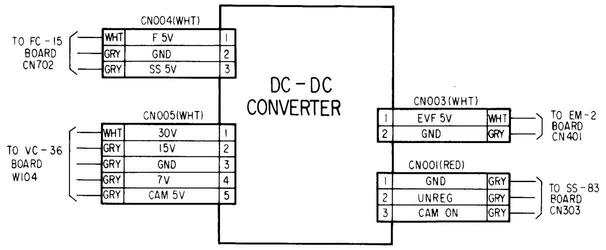


R526 6.8k
R524
R527
R528
Q505
R525 27k
R515 270k
R516 270k
R517
R518 33k
IC502
R508 33k
R501 1k
C515 0.0022
C514 0.0022
Q508
Q507
Q503
Q504
C506
R510 100k
R511 100k
R513 10k
R514 1M
R503 2.2k
Q502
R512 150k
D501
IC503
R504 1k
1-626-280-
21
6
7
8
9
10
11
12

AF-44 BOARD (COMPONENT SIDE)



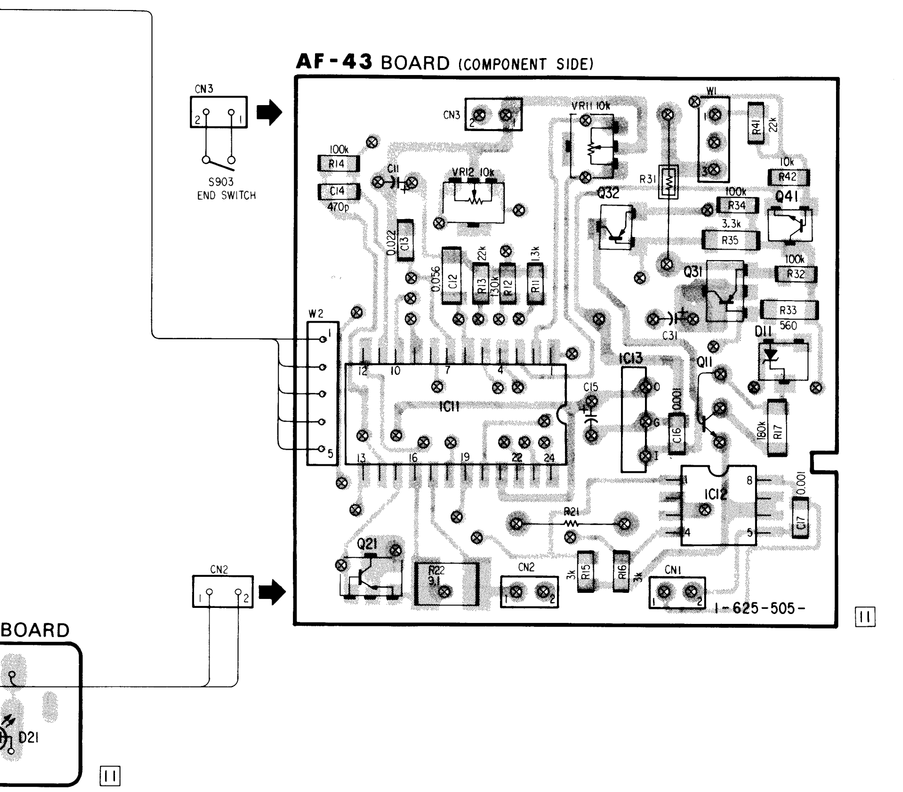
W3
C1 3p
R1 2.2M
D1
IC1
C3 0.0027
C5
C6
R3 22k
R4 22k
C2 3p
R2 2.2M
C4 0.0027
1-625-506-
11



TO FC-15 BOARD CN702
CN004(WHT)
WHT F 5V 1
GRY GND 2
GRY SS 5V 3
TO VC-36 BOARD W104
CN005(WHT)
WHT 30V 1
GRY 15V 2
GRY GND 3
GRY 7V 4
GRY CAM 5V 5
DC-DC CONVERTER
CN003(WHT)
1 EVF 5V WHT
2 GND GRY
TO EM-2 BOARD CN401
CN001(RED)
1 GND GRY
2 UNREG GRY
3 CAM ON GRY
TO SS-83 BOARD CN303

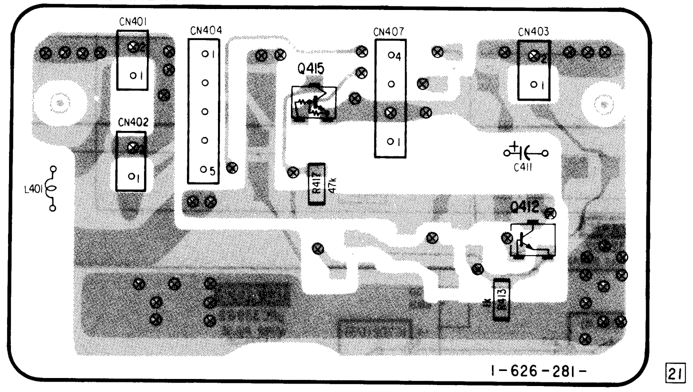
AF-43 BOARD (COMPONENT SIDE)

LD-9 BOARD



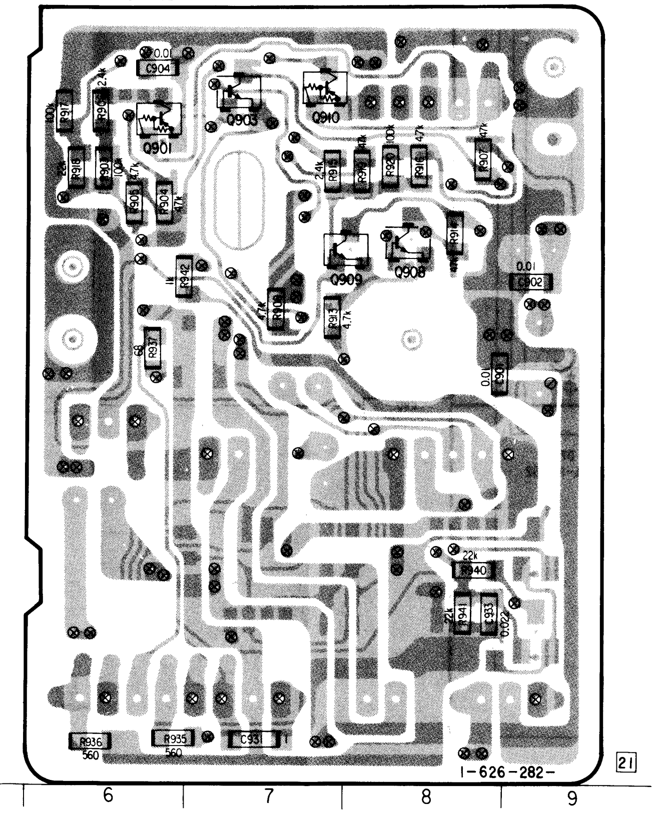
CN3
S903 END SWITCH
W1
VR11 10k
VR12 10k
R14 100k
C14 470p
C11
Q32
R31
R41 22k
R42 10k
R34 100k
R35 3.3k
Q41
R32 100k
R33 560
Q31
D11
C31
W2
IC11
IC13
C15
Q11
R17 150k
IC12
C17 0.001
R21
Q21
R22 3.3k
CN2
R15 3k
R16 3k
CN1
1-625-505-
11
D21

EM-2 BOARD (COMPONENT SIDE)



CN401
CN404
CN407
CN403
CN402
Q415
L401
R417 47k
C411
Q412
R413
1-626-281-
21

ZM-6 BOARD (CONDUCTOR SIDE)

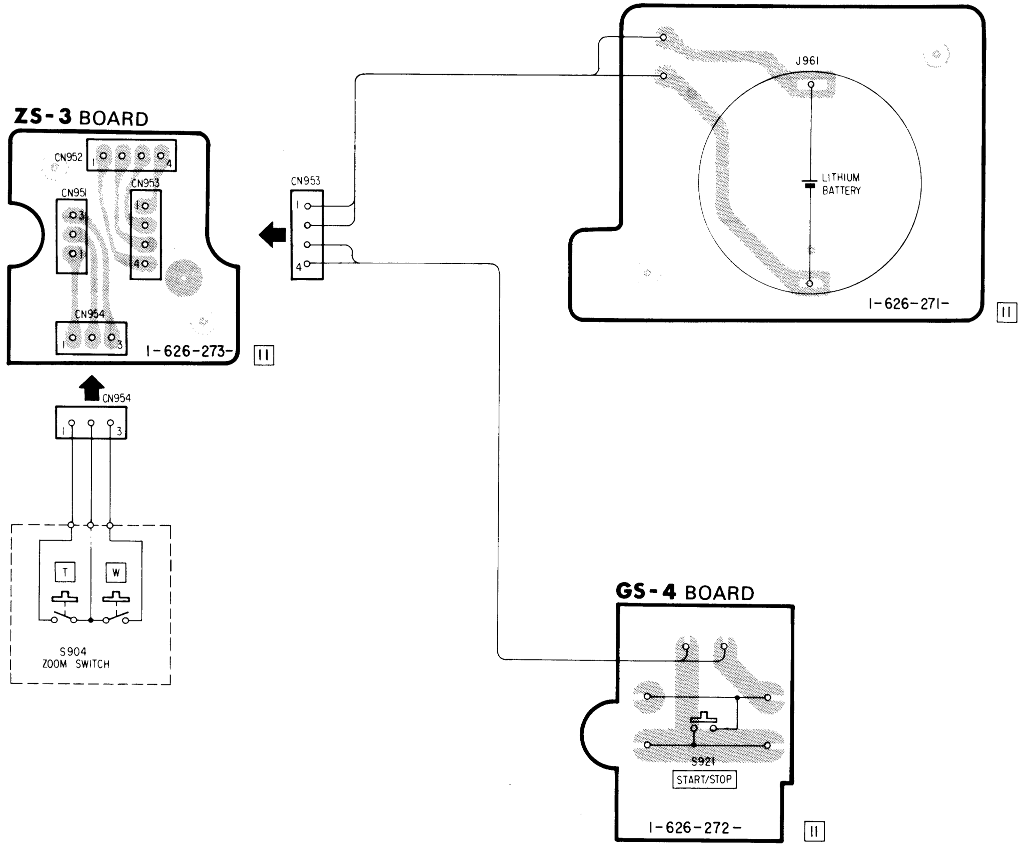


C904 0.01
Q903
Q910
Q901
Q909
Q908
C902 0.01
R940
R941
R936 560
R935 560
C931
1-626-282-
21
6
7
8
9

ZS-3 BOARD

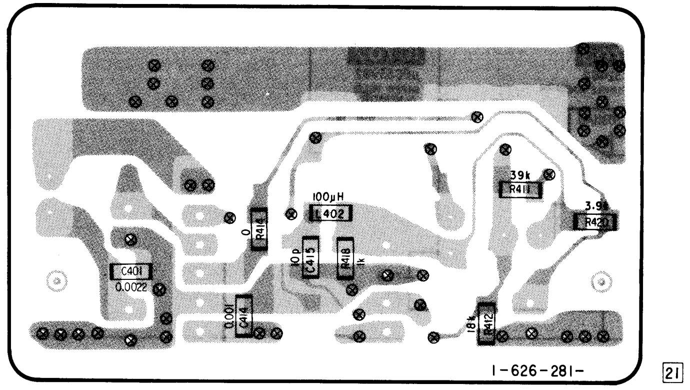
LI-7 BOARD

GS-4 BOARD



CN952
CN951
CN953
CN954
1-626-273-
11
S904 ZOOM SWITCH
T
W
J961
LITHIUM BATTERY
1-626-271-
11
S921
START/STOP
1-626-272-
11

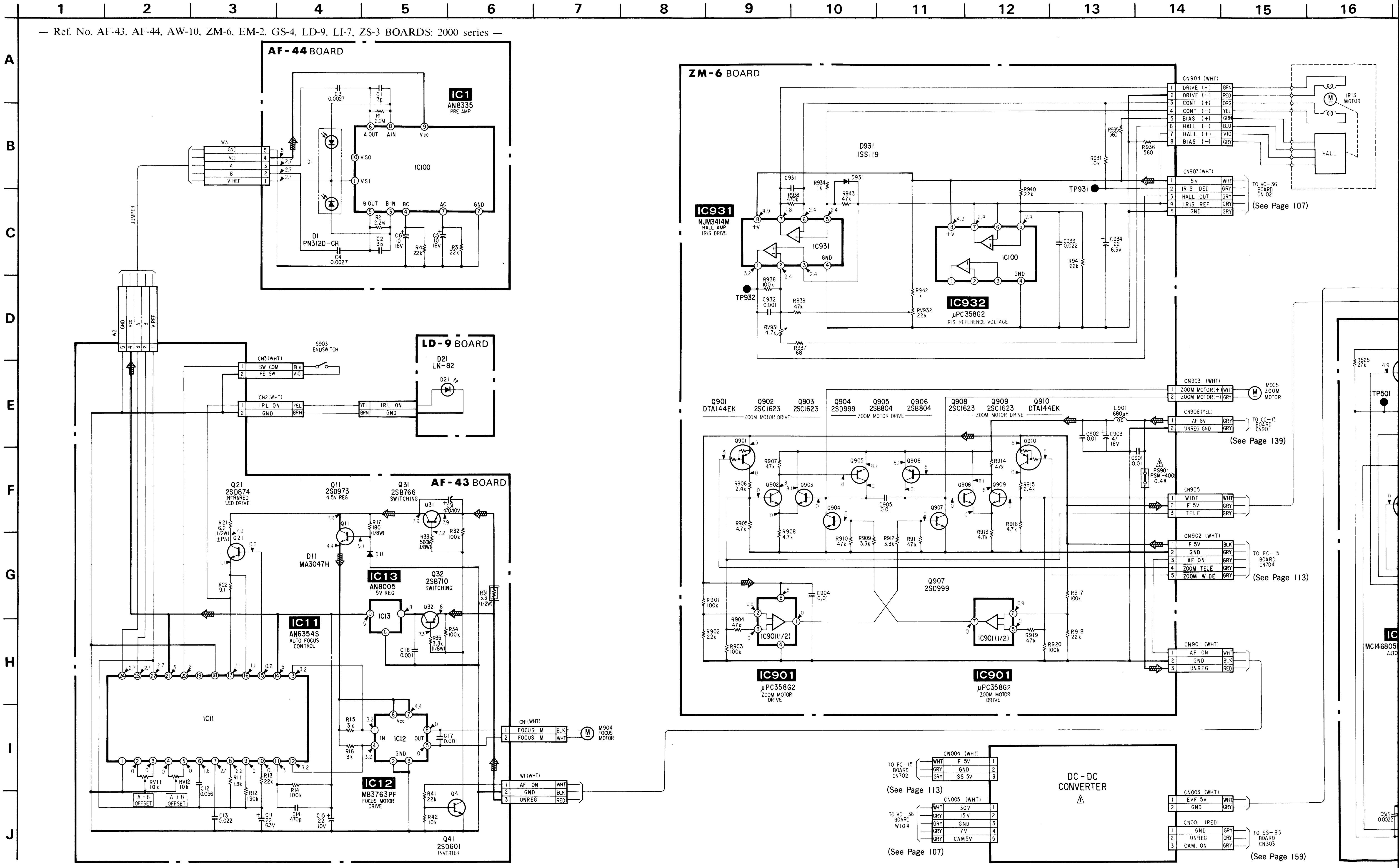
EM-2 BOARD (CONDUCTOR SIDE)



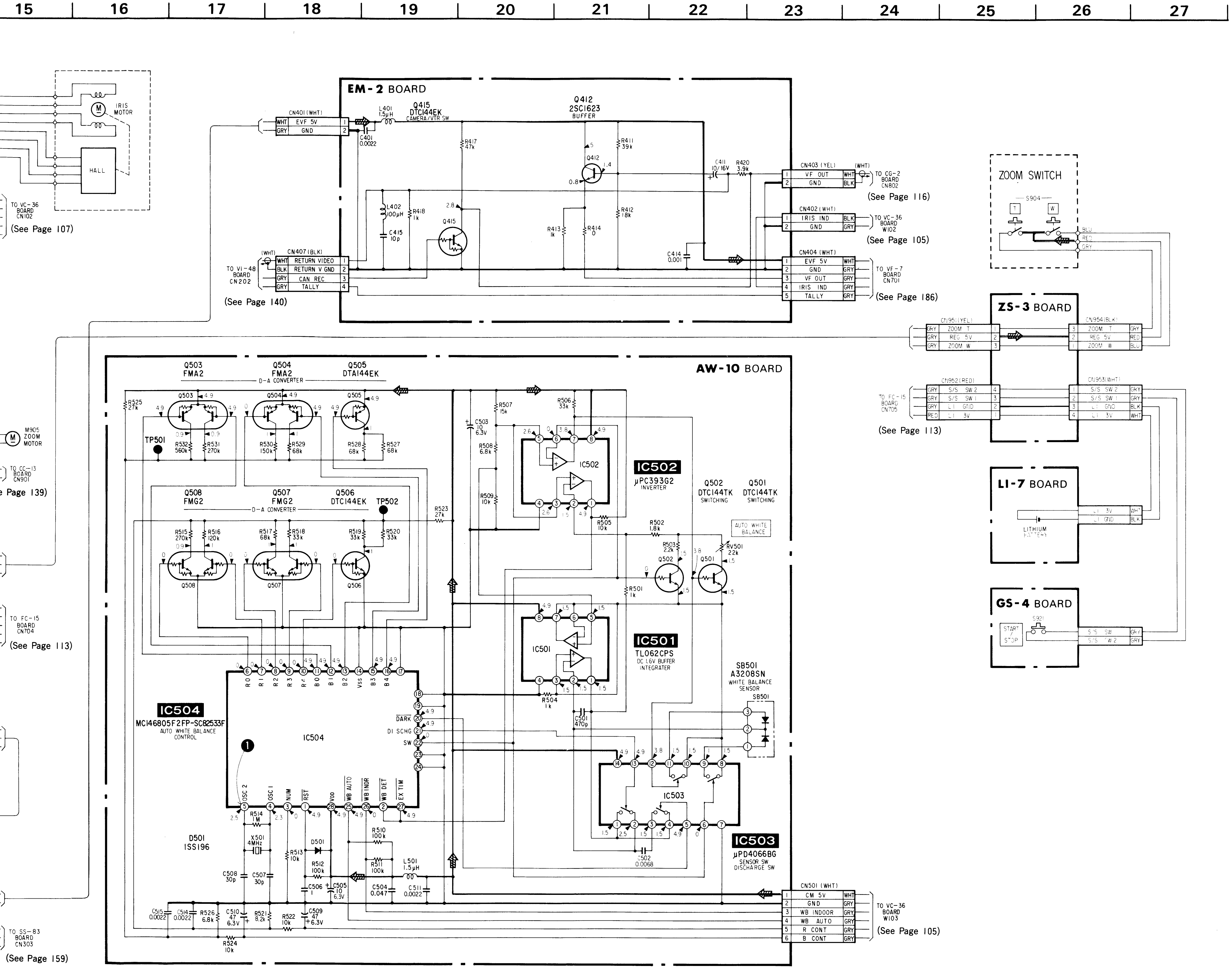
100μH L402
R411 39k
R420 3.9k
R414
C401 0.0022
C415 10p
R418 1k
C414 0.001
R412 18k
1-626-281-
21

AF-43 (AUTO FOCUS CONTROL), AF-44 (AUTO FOCUS SENSOR), AW-10 (AUTO WHITEBALANCE), ZM-6 (ZOOM MOTOR DRIVE, IRIS CONTROL), EM-2 (VIEW FINDER RELAY), GS-4 (START/STOP SWITCH), ZS-3 (START, STOP/ZOOM S

— Ref. No. AF-43, AF-44, AW-10, ZM-6, EM-2, GS-4, LD-9, LI-7, ZS-3 BOARDS: 2000 series —


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I J
AF-44 BOARD
IC1 AN8335 PRE AMP
IC100
D1 PN312D-CH
W3 GND Vcc A B V REF
JUMPER
W2 GND Vcc A B V REF
LD-9 BOARD
D21 LN-82
S903 ENDSWITCH
CN3 (WHT) SW COM FE SW
CN2 (WHT) IRL ON GND
AF-43 BOARD
Q21 2SD874 INFRARED LED DRIVE
Q11 2SD973 4.5V REG
Q31 2SB766 SWITCHING
D11 MA3047H
IC13 AN8005 5V REG
Q32 2SB710 SWITCHING
IC11 AN6354S AUTO FOCUS CONTROL
IC11
IC12 MB3763PF FOCUS MOTOR DRIVE
CN1 (WHT) FOCUS M FOCUS M
M904 FOCUS MOTOR
W1 (WHT) AF ON GND UNREG
Q41 2SD601 INVERTER
RV11 10k A-B OFFSET
RV12 10k A+B OFFSET
ZM-6 BOARD
IC931 NJM3414M HALL AMP IRIS DRIVE
IC932 μPC358G2 IRIS REFERENCE VOLTAGE
D931 1SS119
TP931
TP932
CN904 (WHT) DRIVE (+) DRIVE (−) CONT (+) CONT (−) BIAS (+) HALL (−) HALL (+) BIAS (−)
IRIS MOTOR
HALL
CN907 (WHT) 5V IRIS DED HALL OUT IRIS REF GND
TO VC-36 BOARD CN102 (See Page 107)
Q901 DTA144EK
Q902 2SC1623
Q903 2SC1623
Q904 2SD999
Q905 2SB804
Q906 2SB804
Q908 2SC1623
Q909 2SC1623
Q910 DTA144EK
ZOOM MOTOR DRIVE
L901 680μH
PS901 PSM-400 0.4A
CN903 (WHT) ZOOM MOTOR(+) ZOOM MOTOR(−)
M905 ZOOM MOTOR
CN906 (YEL) AF 6V UNREG GND
TO CC-13 BOARD CN901 (See Page 139)
CN905 WIDE F 5V TELE
CN902 (WHT) F 5V GND AF ON ZOOM TELE ZOOM WIDE
TO FC-15 BOARD CN704 (See Page 113)
Q907 2SD999
IC901 μPC358G2 ZOOM MOTOR DRIVE
IC901 (1/2)
CN901 (WHT) AF ON GND UNREG
CN004 (WHT) F 5V GND SS 5V
TO FC-15 BOARD CN702 (See Page 113)
CN005 (WHT) 30V 15V GND 7V CAM5V
TO VC-36 BOARD W104 (See Page 107)
DC-DC CONVERTER
CN003 (WHT) EVF 5V GND
CN001 (RED) GND UNREG CAM. ON
TO SS-83 BOARD CN303 (See Page 159)
TP501
MC146805
R525 27k

S-3 (START, STOP/ZOOM SWITCH RELAY), LI-7 (LITHIUM BATTERY STORAGE), LD-9 (INFRARED EMISSION) SCHEMATIC DIAGRAM


15
16
17
18
19
20
21
22
23
24
25
26
27
IRIS MOTOR
HALL
TO VC-36 BOARD CN102
(See Page 107)
EM-2 BOARD
CN401 (WHT)
EVF 5V
GND
L401 1.5μH
Q415 DTC144EK CAMERA/VTR SW
C401 0.0022
R417 47k
Q412 2SC1623 BUFFER
R411 39k
C411 10/16V
R420 3.9k
CN403 (YEL)
VF OUT
GND
TO CG-2 BOARD CN802
(See Page 116)
L402 100μH
R418 1k
C415 10p
R413 1k
R414 0
R412 18k
CN402 (WHT)
IRIS IND
GND
TO VC-36 BOARD W102
(See Page 105)
C414 0.001
CN407 (BLK)
RETURN VIDEO
RETURN V GND
CAN REC
TALLY
TO VI-48 BOARD CN202
(See Page 140)
CN404 (WHT)
EVF 5V
GND
VF OUT
IRIS IND
TALLY
TO VF-7 BOARD CN701
(See Page 186)
ZOOM SWITCH
S904
T
W
ZS-3 BOARD
CN951 (YEL)
ZOOM T
REG 5V
ZOOM W
CN954 (BLK)
CN952 (RED)
S/S SW 2
S/S SW 1
LI GND
LI 3V
CN953 (WHT)
TO FC-15 BOARD CN705
(See Page 113)
LI-7 BOARD
LITHIUM BATTERY
GS-4 BOARD
START / STOP
S921
S/S SW
S/S SW 2
M905 ZOOM MOTOR
TO CC-13 BOARD CN901
(See Page 139)
TO FC-15 BOARD CN704
(See Page 113)
TO SS-83 BOARD CN303
(See Page 159)
AW-10 BOARD
Q503 FMA2
Q504 FMA2
Q505 DTA144EK
D-A CONVERTER
R525 27k
TP501
R532 560k
R531 270k
R530 150k
R529 68k
R528 68k
R527 68k
C503 10 6.3V
R507 15k
R506 33k
R508 6.8k
R509 10k
IC502
μPC393G2 INVERTER
Q502 DTC144TK SWITCHING
Q501 DTC144TK SWITCHING
Q508 FMG2
Q507 FMG2
Q506 DTC144EK
TP502
R523 27k
R515 270k
R516 120k
R517 68k
R518 33k
R519 33k
R520 33k
R505 10k
R502 1.8k
AUTO WHITE BALANCE
R503 2.2k
RV501 22k
R501 1k
IC501
TL062CPS DC L6V BUFFER INTEGRATER
SB501 A3208SN WHITE BALANCE SENSOR
R504 1k
C501 470p
IC504
MC146805F2FP-SC82533F AUTO WHITE BALANCE CONTROL
IC504
DARK
DI SCHG
SW
IC503
μPD4066BG SENSOR SW DISCHARGE SW
D501 1SS196
R514 1M
X501 4MHz
R513 10k
R512 100k
R510 100k
R511 100k
L501 1.5μH
C508 30p
C507 30p
C506 1
C505 10 6.3V
C504 0.047
C511 0.0022
C502 0.0068
C515 0.0027
C514 0.0022
R526 6.8k
C510 47 6.3V
R521 8.2k
R522 10k
C509 47 6.3V
R524 10k
CN501 (WHT)
CM 5V
GND
WB INDOOR
WB AUTO
R CONT
B CONT
TO VC-36 BOARD W103
(See Page 105)

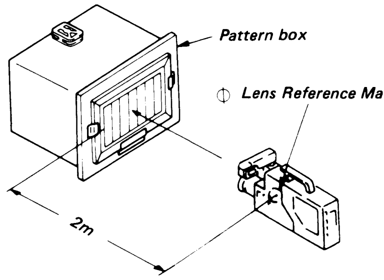
Note (Schematic Diagram)

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors are in μF unless otherwise noted. pF: μμF
  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, chip resistor are 1/10W unless otherwise noted.
  kΩ : 1000Ω, MΩ : 1000kΩ.
- All variable and semi-fixed resistors have characteristics curve B, unless otherwise noted.
- : nonflammable resistor.
- : fusible resistor.
- ☐ : panel disignation.
- ☐ : adjustment for repair.
- ━ : B + line.
- Measuring conditions of voltage value and waveform
  (1) The subject is color bar of pattern box.
  (2) Voltage are DC between ground and measurement point.
  (The tester used is the digital multimeter DC10MΩ)
- ⇨ indicates the I/O direction of B lines (+, −).
- The ● number is the reference number in the waveform diagram.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

1. Connection


Pattern box
Lens Reference Mark
2m

2. Adjust the distance so that the output w form of Fig. a and the Fig. b can be obtain.

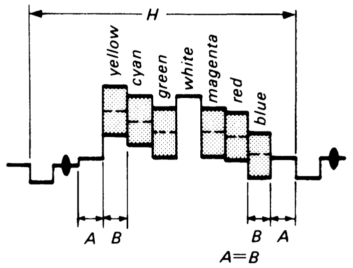


Fig. a Camera output waveform of TP345 on VC-37 board.

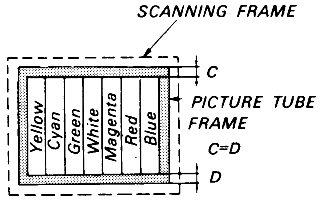

SCANNING FRAME
C
PICTURE TUBE FRAME
C=D
D
Yellow
Cyan
Green
White
Magenta
Red
Blue

Fig. b Picture of TV monitor screen

Note (Printed Wiring Board)

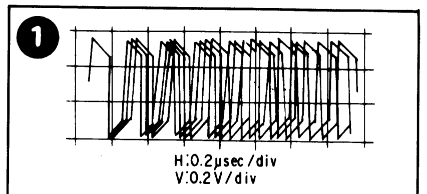
- ○— : indicates a lead wire mounted on the component side.
- ●— : indicates a lead wire mounted on the conductor side.
- ⊗ : Through hole.
- ▨ : Pattern from the side which enables seeing.

* : Pattern of the rear side.

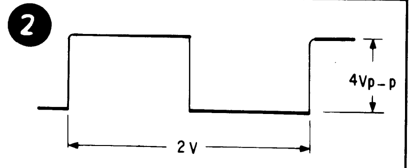
- The ● number is the reference number in the waveform diagram.
- Digital transistor (RP-66: Q101, 107, 108, 120, 124, 132) transistor with resistors.
  Refer to the RP-66 board schematic diagrams for digital transistor.

> **Note**
>
> | | |
> |---|---|
> | Conductor side: | Parts on the conductor side being seen from the conductor are stated. |
> | Component side: | Parts on the component side being seen from the component are stated. |
>
> Regarding color indication of pattern
>
> * Pattern being seen in the state from the surface side are indicated in gray pattern.
>
> * Pattern being seen in the state of the rear surface side is indicated in green pattern.

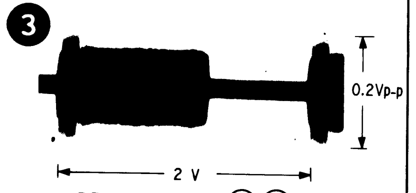
RP-66 BOARD (VIDEO)



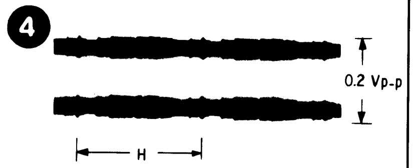
RP-59 BOARD ④ REC



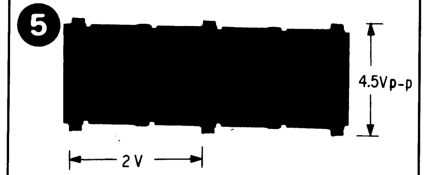
RP-59 BOARD ⑥ REC/PB



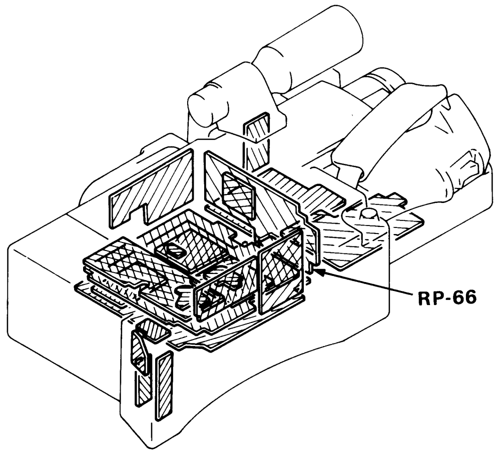
RP-59 BOARD ⑭⑮ PB



RP-59 BOARD ⑳ REC



RP-59 BOARD ㉒㉗ REC

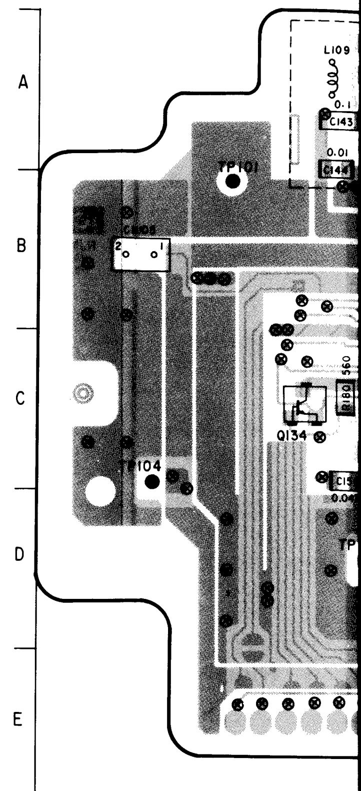


RP-66 (VIDEO/AUDIO RF SIGNAL PROCESS, FLYING ERASE OSC) PR

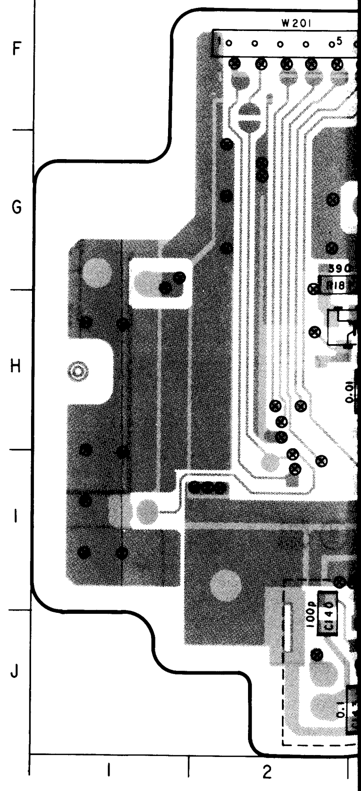
– Ref. No. RP-66 BOARD: 3000 series –

RP-66 BOARD	
CN101	D-7
CN102	A-4
CN103	A-6
CN104	A-5
CN105	B-1
Q101	H-8
Q102	H-8
Q103	C-8
Q104	I-8
Q105	I-8
Q106	B-8
Q107	J-8
Q108	J-7
Q109	I-6
Q120	G-3
Q121	G-4
Q122	D-3
Q123	G-3
Q124	C-4
Q125	H-4
Q126	H-4
Q127	H-3
Q128	A-3
Q130	J-3
Q132	I-4
Q133	H-2
Q134	C-3
RV101	C-9
RV102	D-3
TP101	B-2
TP102	A-4
TP103	D-3
TP104	C-1

RP-66 BOARD (COMPONENT



RP-66 BOARD (CONDUCTOR SI



t side.
tor side.

veform

24, 132)

or digital

ng
d.
ng
d.

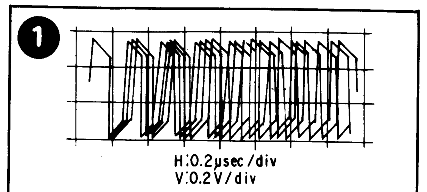
ce

ce

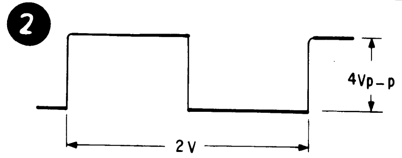
RP-66 (VIDEO/AUDIO RF SIGNAL PROCESS, FLYING ERASE OSC) PRINTED WIRING BOARD

– Ref. No. RP-66 BOARD: 3000 series –

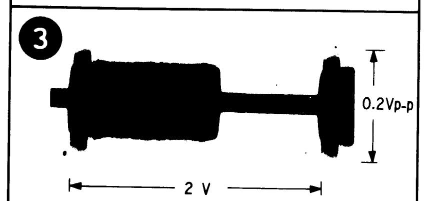
RP-66 BOARD (VIDEO)



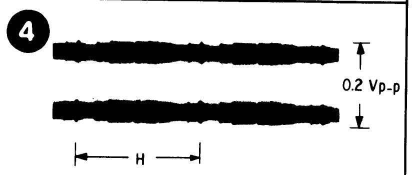
RP-59 BOARD ④ REC



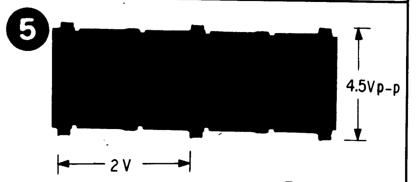
RP-59 BOARD ⑥ REC/PB



RP-59 BOARD ⑭⑮ PB

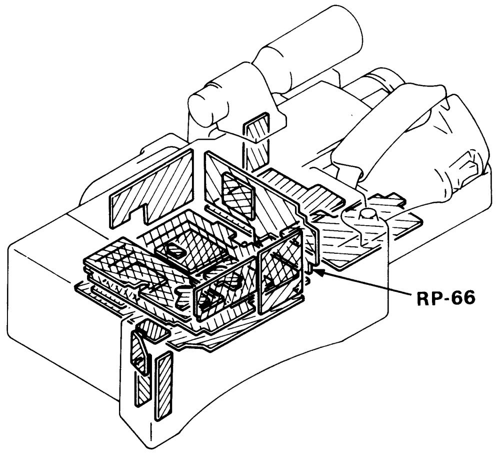


RP-59 BOARD ⑳ REC

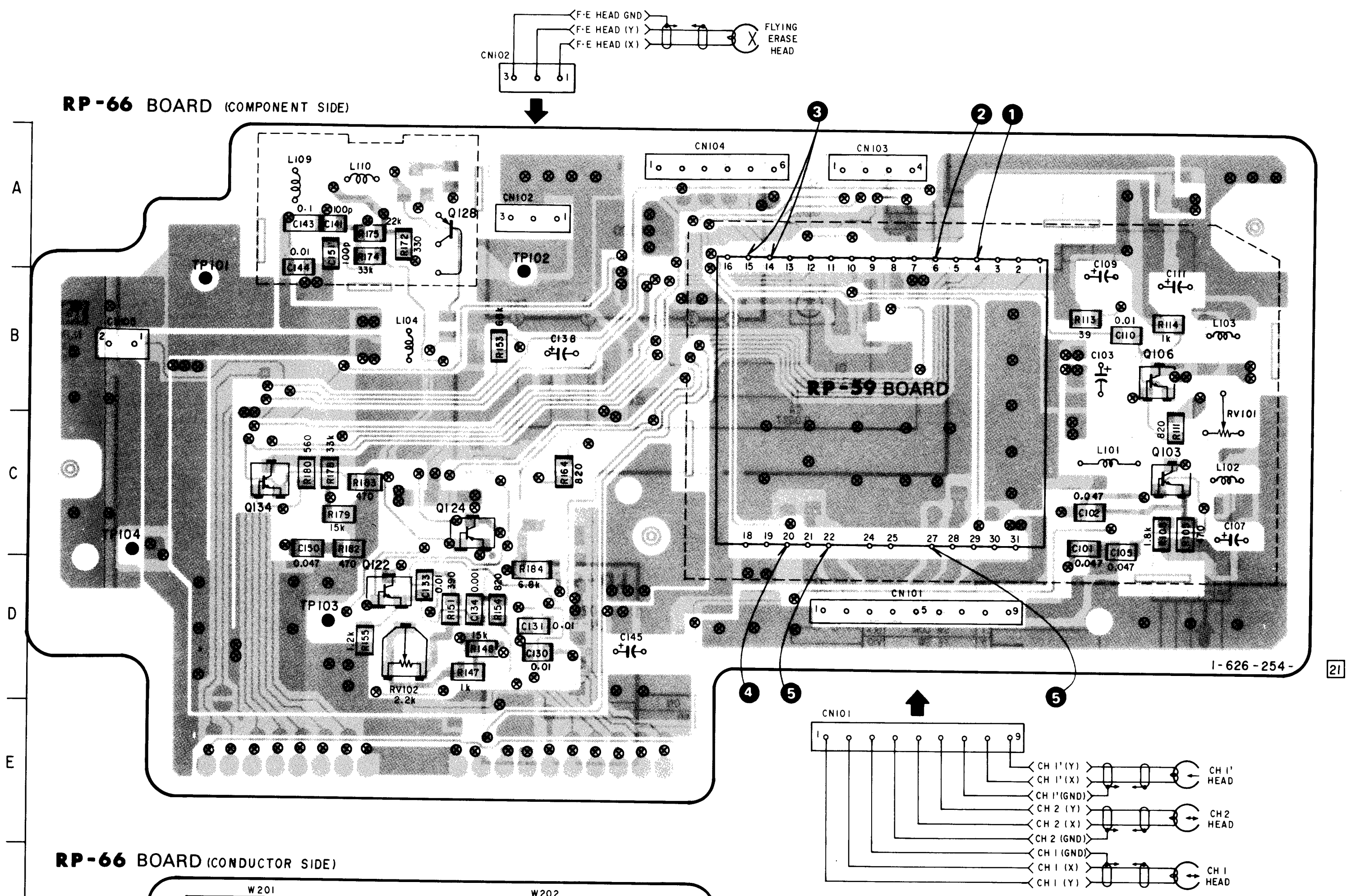


RP-59 BOARD ㉒㉗ REC

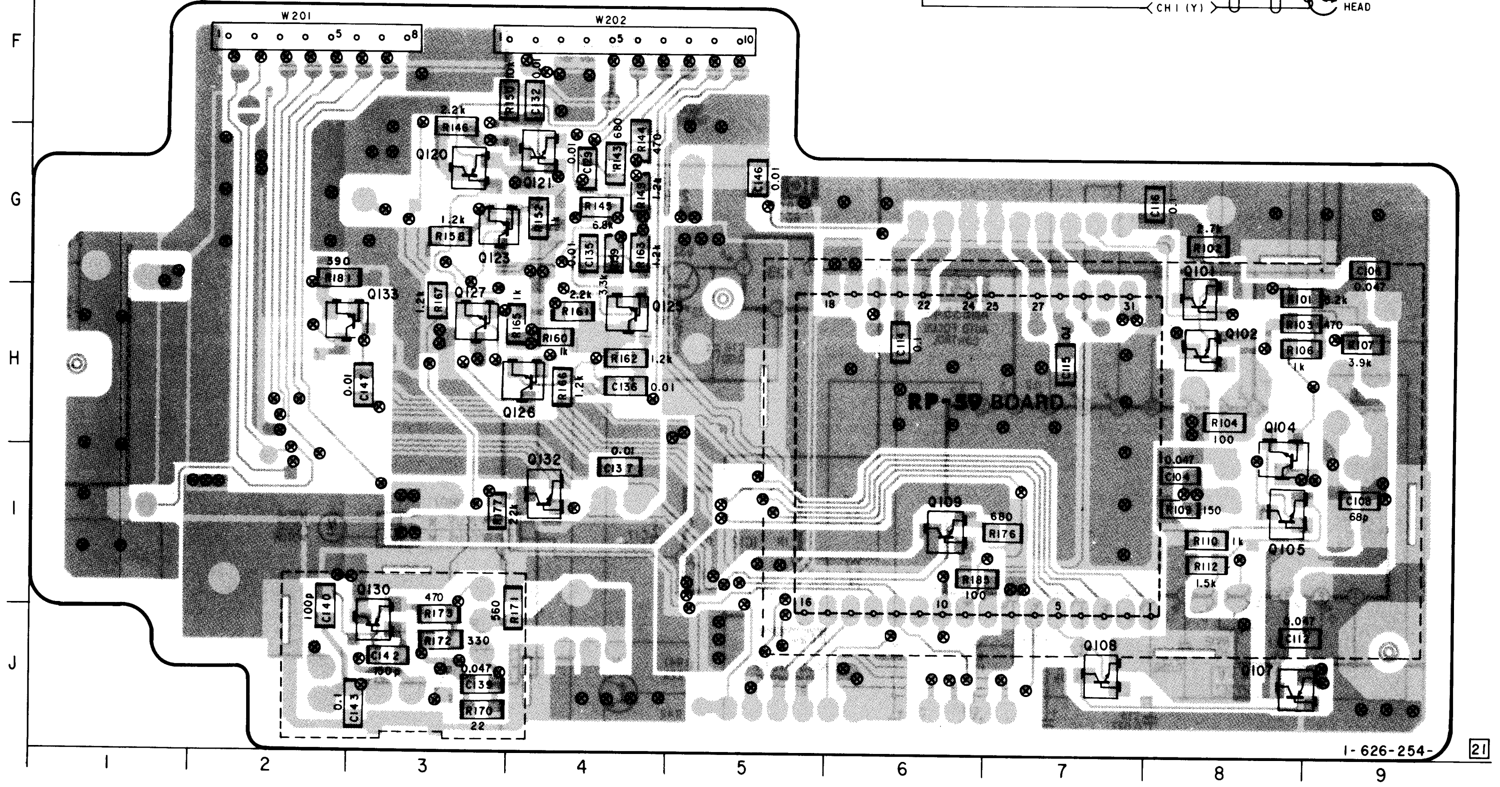
RP-66 BOARD	
CN101	D-7
CN102	A-4
CN103	A-6
CN104	A-5
CN105	B-1
Q101	H-8
Q102	H-8
Q103	C-8
Q104	I-8
Q105	I-8
Q106	B-8
Q107	J-8
Q108	J-7
Q109	I-6
Q120	G-3
Q121	G-4
Q122	D-3
Q123	G-3
Q124	C-4
Q125	H-4
Q126	H-4
Q127	H-3
Q128	A-3
Q130	J-3
Q132	I-4
Q133	H-2
Q134	C-3
RV101	C-9
RV102	D-3
TP101	B-2
TP102	A-4
TP103	D-3
TP104	C-1



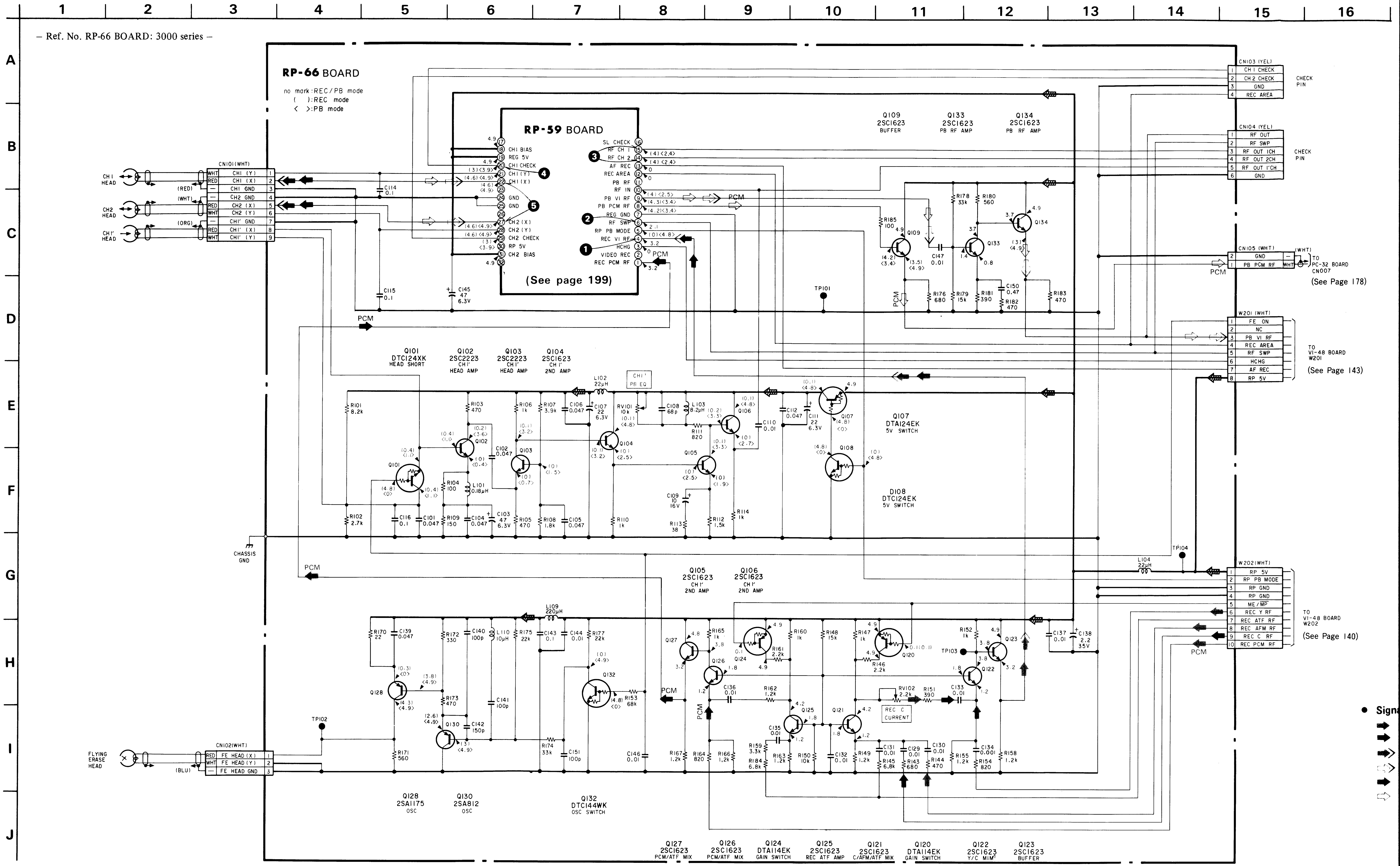
RP-66 BOARD (COMPONENT SIDE)

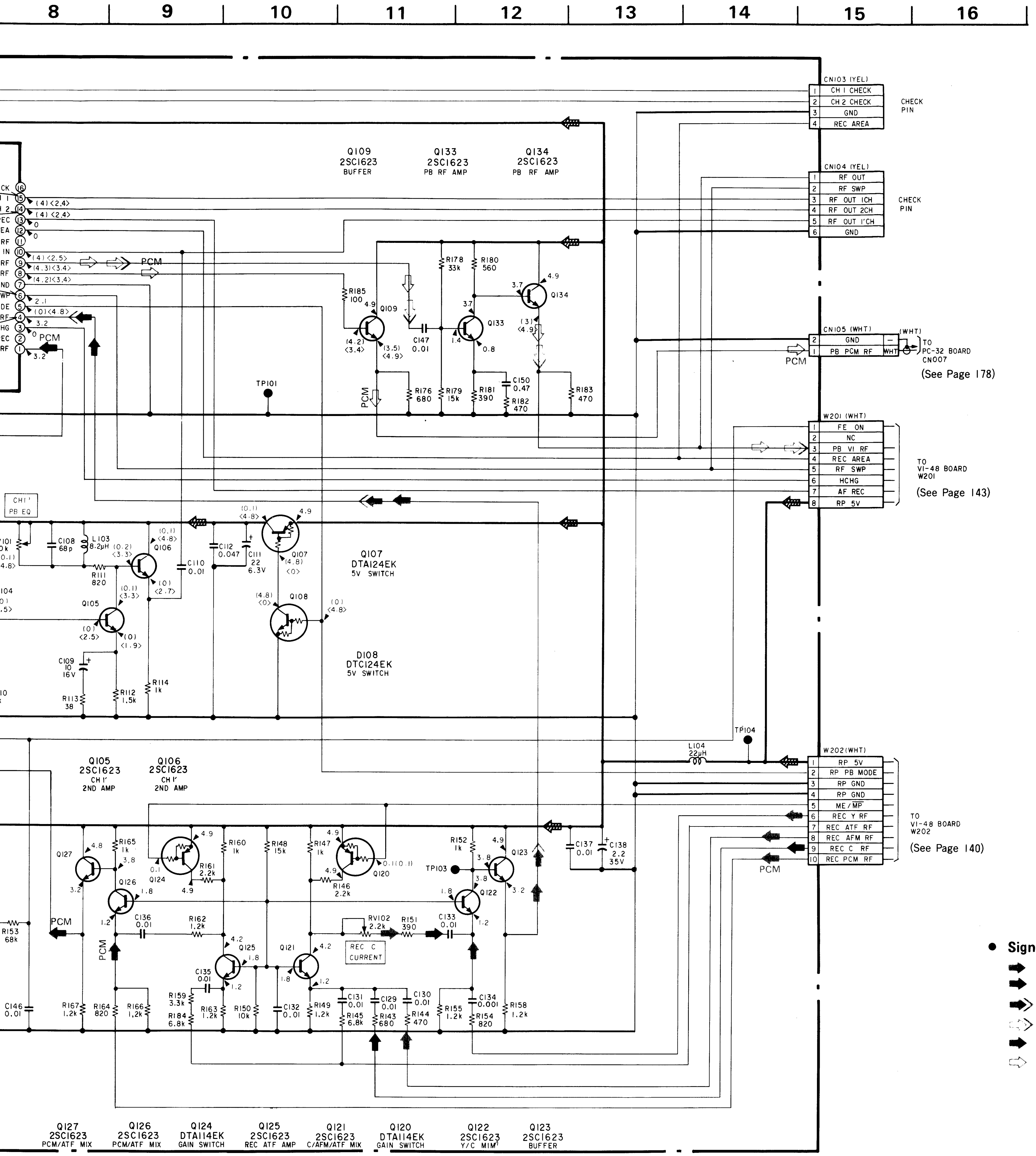

CN102
F-E HEAD GND
F-E HEAD (Y)
F-E HEAD (X)
FLYING ERASE HEAD
A
B
C
D
E
③
②
①
④
⑤
⑤
CN104
CN103
CN102
CN105
CN101
L109
L110
Q128
TP101
TP102
TP103
TP104
L104
C138
R153
R164
Q124
Q134
Q122
RV102 2.2k
C145
RP-59 BOARD
C109
C111
R113
C110
R114
L103
C103
Q106
RV101
L101
Q103
L102
C107
C102
C101
C105
CN101
CH 1' (Y)
CH 1' (X)
CH 1' (GND)
CH 2 (Y)
CH 2 (X)
CH 2 (GND)
CH 1 (GND)
CH 1 (X)
CH 1 (Y)
CH 1' HEAD
CH 2 HEAD
CH 1 HEAD
1-626-254-
21

RP-66 BOARD (CONDUCTOR SIDE)


F
G
H
I
J
W201
W202
Q120
Q121
Q123
Q127
Q133
Q125
Q126
Q132
Q130
Q101
Q102
Q104
Q105
Q109
Q108
Q107
RP-59 BOARD
1-626-254-
21
1
2
3
4
5
6
7
8
9

RP-66 (VIDEO/AUDIO RF SIGNAL PROCESS, FLYING ERASE OSC) SCHEMATIC DIAGRAM


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I J
– Ref. No. RP-66 BOARD: 3000 series –
RP-66 BOARD
no mark: REC/PB mode
( ): REC mode
< >: PB mode
RP-59 BOARD
(See page 199)
CHI BIAS
REG 5V
CHI CHECK
CHI (Y)
CHI (X)
GND
GND
CH2 (X)
CH2 (Y)
CH2 CHECK
RP 5V
CH2 BIAS
SL CHECK
RF CH 1
RF CH 2
AF REC
REC AREA
PB RF
RF IN
PB VI RF
PB PCM RF
REG GND
RF SWP
RP PB MODE
REC VI RF
HCHG
VIDEO REC
REC PCM RF
PCM
CN101 (WHT)
CH1 (Y)
CH1 (X)
CH1 GND
CH2 GND
CH2 (X)
CH2 (Y)
CH1' GND
CH1' (X)
CH1' (Y)
CH1 HEAD
CH2 HEAD
CH1' HEAD
(RED)
(WHT)
(ORG)
CHASSIS GND
CN102 (WHT)
FE HEAD (X)
FE HEAD (Y)
FE HEAD GND
FLYING ERASE HEAD
(BLU)
CN103 (YEL)
CH 1 CHECK
CH 2 CHECK
GND
REC AREA
CHECK PIN
CN104 (YEL)
RF OUT
RF SWP
RF OUT 1CH
RF OUT 2CH
RF OUT 1'CH
GND
CHECK PIN
CN105 (WHT)
GND
PB PCM RF
(WHT)
TO PC-32 BOARD CN007
(See Page 178)
W201 (WHT)
FE ON
NC
PB VI RF
REC AREA
RF SWP
HCHG
AF REC
RP 5V
TO VI-48 BOARD W201
(See Page 143)
W202 (WHT)
RP 5V
RP PB MODE
RP GND
RP GND
ME/MP
REC Y RF
REC ATF RF
REC AFM RF
REC C RF
REC PCM RF
TO VI-48 BOARD W202
(See Page 140)
Q109 2SC1623 BUFFER
Q133 2SC1623 PB RF AMP
Q134 2SC1623 PB RF AMP
Q101 DTC124XK HEAD SHORT
Q102 2SC2223 CH1' HEAD AMP
Q103 2SC2223 CH1' HEAD AMP
Q104 2SC1623 CH1' 2ND AMP
Q107 DTA124EK 5V SWITCH
D108 DTC124EK 5V SWITCH
Q105 2SC1623 CH1' 2ND AMP
Q106 2SC1623 CH1' 2ND AMP
CH1' PB EQ
Q128 2SA1175 OSC
Q130 2SA812 OSC
Q132 DTC144WK OSC SWITCH
Q127 2SC1623 PCM/ATF MIX
Q126 2SC1623 PCM/ATF MIX
Q124 DTA114EK GAIN SWITCH
Q125 2SC1623 REC ATF AMP
Q121 2SC1623 C/AFM/ATF MIX
Q120 DTA114EK GAIN SWITCH
Q122 2SC1623 Y/C MIM
Q123 2SC1623 BUFFER
REC C CURRENT
TP101
TP102
TP103
TP104
L102 22μH
L103 8.2μH
L104 22μH
L109 220μH
L110 10μH
L101 0.18μH
RV101 10k
RV102 2.2k
Sign


8
9
10
11
12
13
14
15
16
CN103 (YEL)
1 CH 1 CHECK
2 CH 2 CHECK
3 GND
4 REC AREA
CHECK PIN
CN104 (YEL)
1 RF OUT
2 RF SWP
3 RF OUT 1CH
4 RF OUT 2CH
5 RF OUT 1'CH
6 GND
CHECK PIN
CN105 (WHT)
2 GND
1 PB PCM RF
(WHT)
TO PC-32 BOARD CN007
(See Page 178)
W201 (WHT)
1 FE ON
2 NC
3 PB V1 RF
4 REC AREA
5 RF SWP
6 HCHG
7 AF REC
8 RP 5V
TO VI-48 BOARD W201
(See Page 143)
W202 (WHT)
1 RP 5V
2 RP PB MODE
3 RP GND
4 RP GND
5 ME/MP
6 REC Y RF
7 REC ATF RF
8 REC AFM RF
9 REC C RF
10 REC PCM RF
TO VI-48 BOARD W202
(See Page 140)
Q109 2SC1623 BUFFER
Q133 2SC1623 PB RF AMP
Q134 2SC1623 PB RF AMP
Q107 DTA124EK 5V SWITCH
D108 DTC124EK 5V SWITCH
Q105 2SC1623 CH1' 2ND AMP
Q106 2SC1623 CH1' 2ND AMP
Q127 2SC1623 PCM/ATF MIX
Q126 2SC1623 PCM/ATF MIX
Q124 DTA114EK GAIN SWITCH
Q125 2SC1623 REC ATF AMP
Q121 2SC1623 C/AFM/ATF MIX
Q120 DTA114EK GAIN SWITCH
Q122 2SC1623 Y/C MIX
Q123 2SC1623 BUFFER
PCM
TP101
TP103
TP104
L104 22μH
CH1' PB EQ
REC C CURRENT
RV102 2.2k
R185 100
R178 33k
R180 560
C147 0.01
R176 680
R179 15k
R181 390
C150 0.47
R182 470
R183 470
C108 68p
L103 8.2μH
R111 820
C110 0.01
C112 0.047
C111 22 6.3V
C109 10 16V
R113 38
R112 1.5k
R114 1k
C137 0.01
C138 2.2 35V
R165 1k
R160 1k
R148 15k
R147 1k
R161 2.2k
R146 2.2k
R152 1k
C136 0.01
R162 1.2k
R151 390
C133 0.01
C135 0.01
R153 68k
C146 0.01
R167 1.2k
R164 820
R166 1.2k
R159 3.3k
R184 6.8k
R163 1.2k
R150 10k
C132 0.01
R149 1.2k
C131 0.01
R145 6.8k
C129 0.01
R143 680
C130 0.01
R144 470
R155 1.2k
C134 0.001
R154 820
R158 1.2k

Note (Schematic Diagram)

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, chip resistor are 1/10W unless otherwise noted.
  kΩ : 1000Ω, MΩ : 1000kΩ.
- All variable and semi-fixed resistors have characteristics curve B, unless otherwise noted.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.
- ▭ : panel disignation.
- ▭ : adjustment for repair.
- ━ : B + line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- All voltage are dc measured with a VOM (10MΩ)
- ⇨ indicates the I/O direction of B lines (+, −).
- The ● number is the reference number in the waveform diagram.

When indicating parts by reference number, please include the board name.

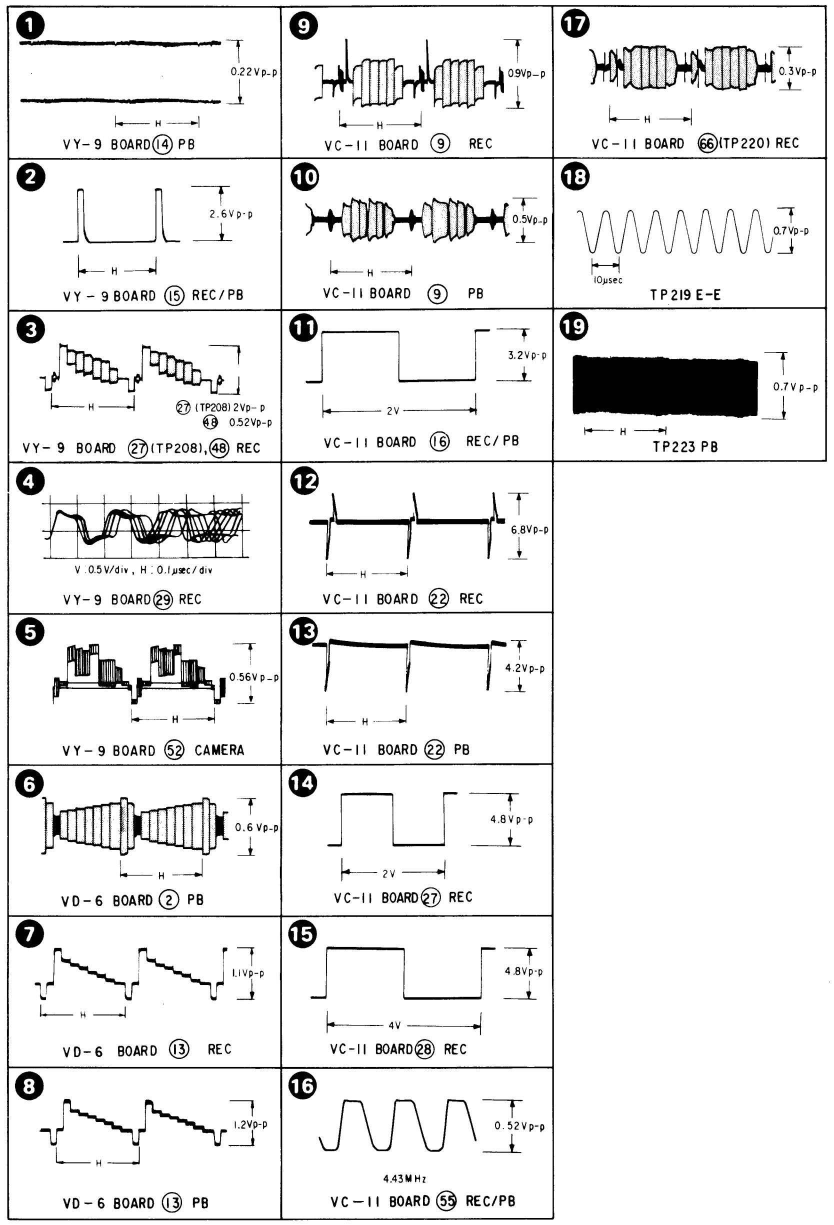
- **Signal path**

➡ :REC Y SIGNAL
➡ **:REC CHROMA SIGNAL**
➡ :REC Y & CHROMA SIGNAL
⇨ :PB Y & CHROMA SIGNAL
➡ **:REC AUDIO SIGNAL**
⇨ **:PB AUDIO SIGNAL**

VI-48 (VIDEO SIGNAL PROCESS), CC-13 (ACCESSORY INPUT/OUTPUT, SWITCHING POWER SUPPLY), SC-9 (VIDEO/AUDIO OUTPUT JACK), PJ-19 (VIDEO/AUDIO INPUT

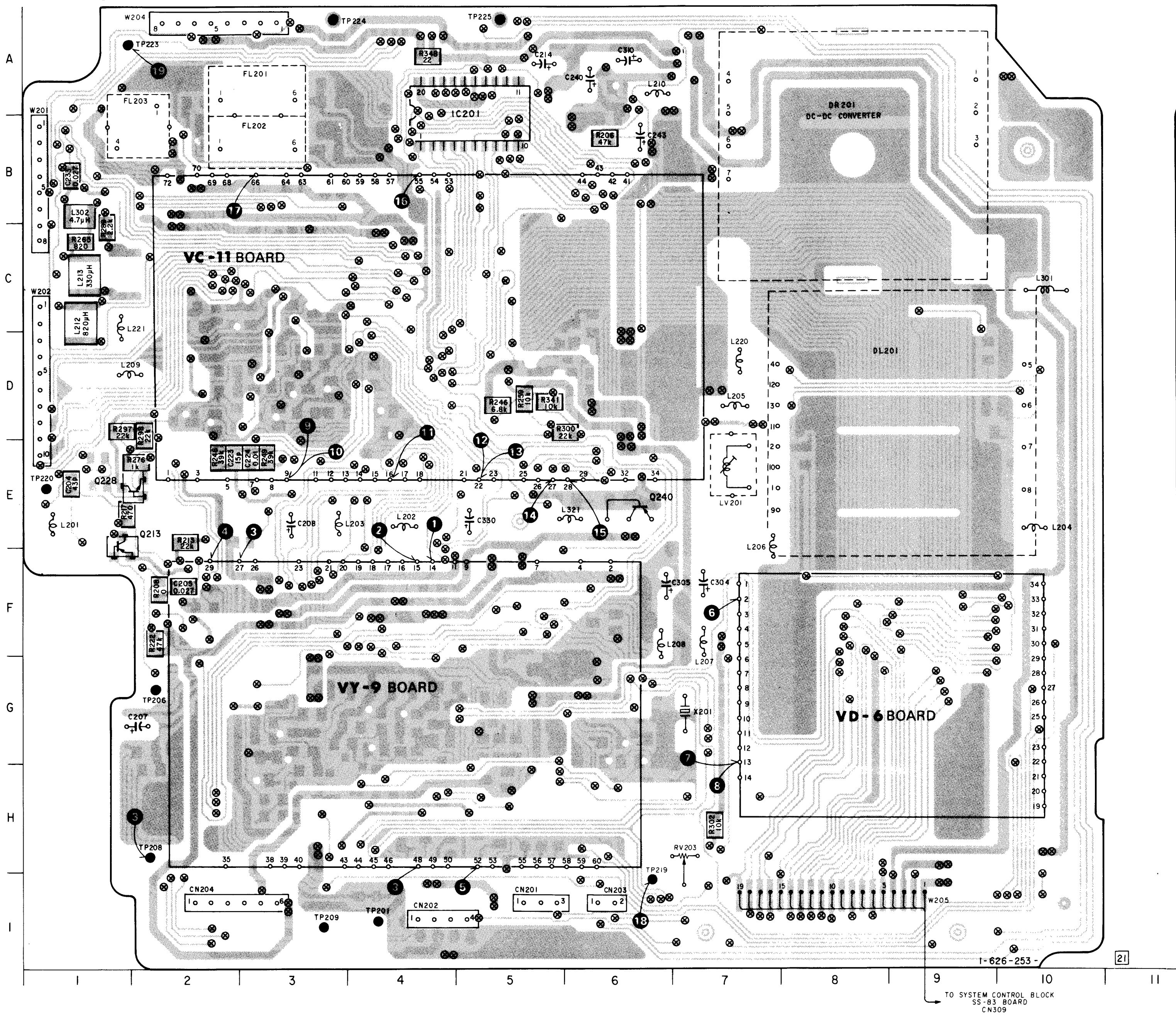
— Ref. No. VI-48, CC-13, PJ-19 BOARDS: 3000 series, SC-9 BOARD: 4000 series —

VI-48 BOARD (VIDEO)



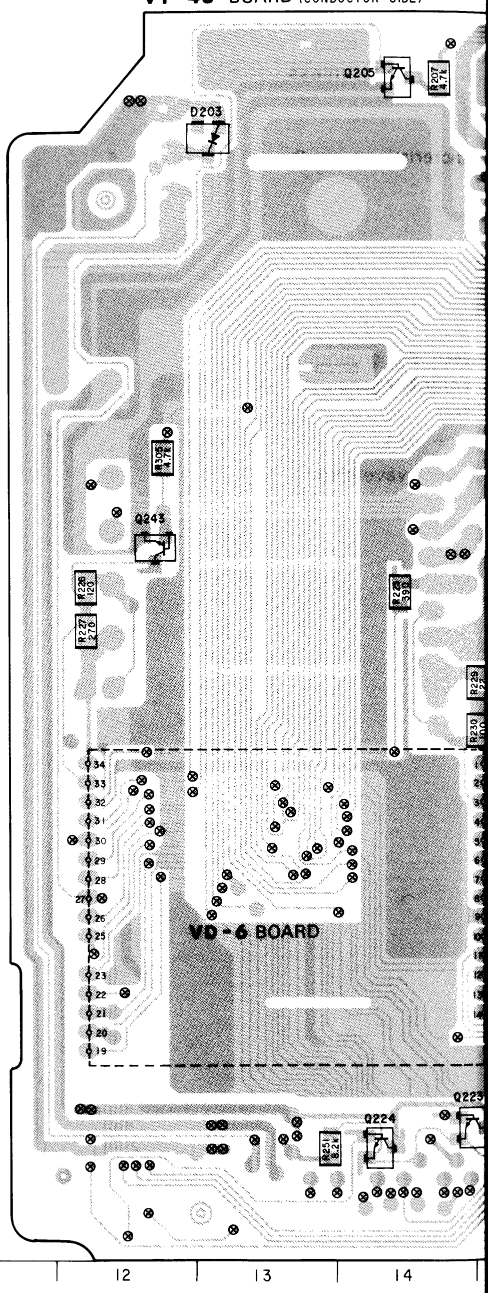
VI-48 BOARD	
CN201	I-5
CN202	I-4
CN203	I-6
CN204	I-2
D201	D-19
D202	H-19
D203	A-13
D205	G-17
FL201	A-3
FL202	B-3
FL203	B-1
IC201	A-4
IC202	G-18
LV201	E-7
Q201	H-16
Q202	F-16
Q203	H-16
Q204	A-16
Q205	A-14
Q209	F-20
Q211	F-20
Q212	F-20
Q213	F-1
Q220	D-17
Q221	D-17
Q222	D-18
Q223	I-14
Q224	I-14
Q225	D-16
Q226	C-20
Q227	C-19
Q228	E-1
Q229	H-17
Q230	B-20
Q240	E-6
Q241	F-16
Q243	D-12
Q244	H-19
Q245	D-20
Q247	G-16
Q248	G-15
Q249	D-19
Q250	D-20
Q251	F-17
Q252	D-18
Q271	G-11
Q272	G-12
Q281	H-17
Q282	H-18
RV203	H-7
TP201	I-4
TP206	G-2
TP208	H-2
TP209	I-3
TP219	I-6
TP220	E-1
TP223	A-1
TP224	A-3
TP225	A-5

VI-48 BOARD (COMPONENT SIDE)

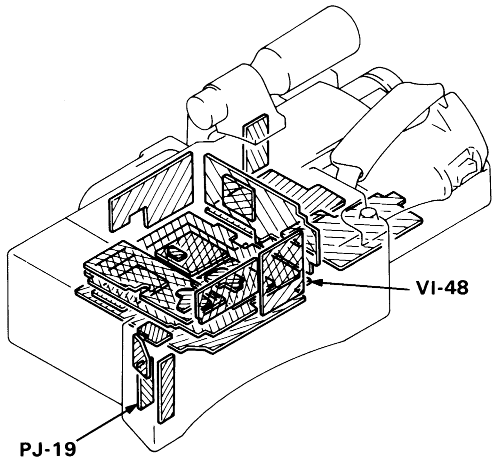


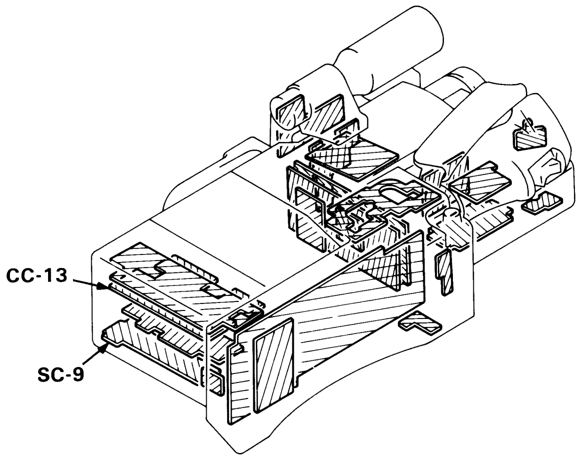
VC-11 BOARD
VY-9 BOARD
VD-6 BOARD
IC201
FL201
FL202
FL203
DR201 DC-DC CONVERTER
DL201
LV201
CN201
CN202
CN203
CN204
W201
W202
W204
W205
TP201
TP206
TP208
TP209
TP219
TP220
TP223
TP224
TP225
Q213
Q228
Q240
RV203
X201
1-626-253-
21
A
B
C
D
E
F
G
H
I
1
2
3
4
5
6
7
8
9
10
11
TO SYSTEM CONTROL BLOCK SS-83 BOARD CN309

VI-48 BOARD (CONDUCTOR SIDE)

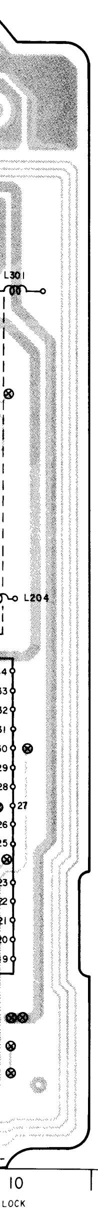


VD-6 BOARD
D203
Q205
Q243
Q224
12
13
14

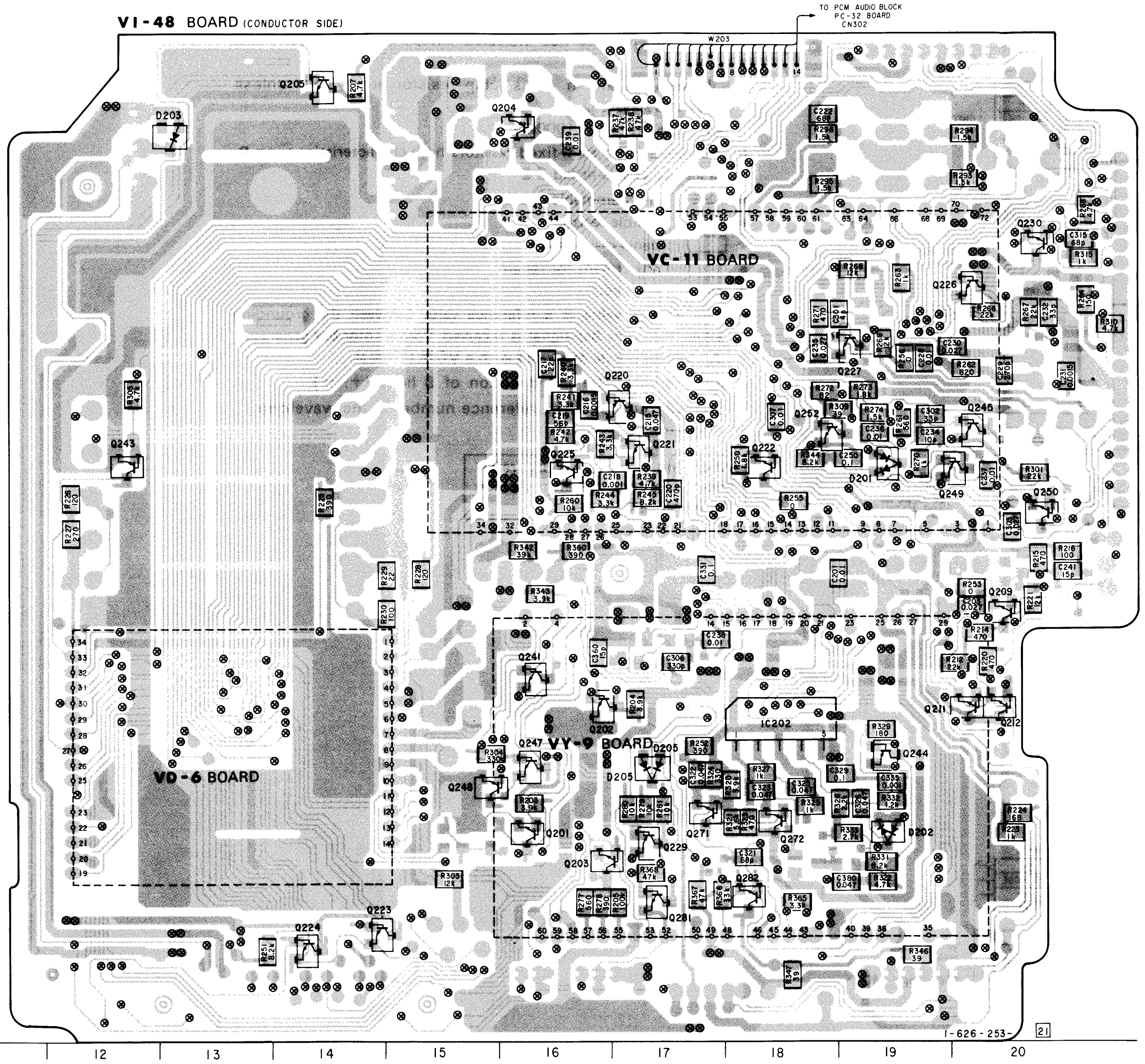




DIO OUTPUT JACK), PJ-19 (VIDEO/AUDIO INPUT JACK) PRINTED WIRING BOARD

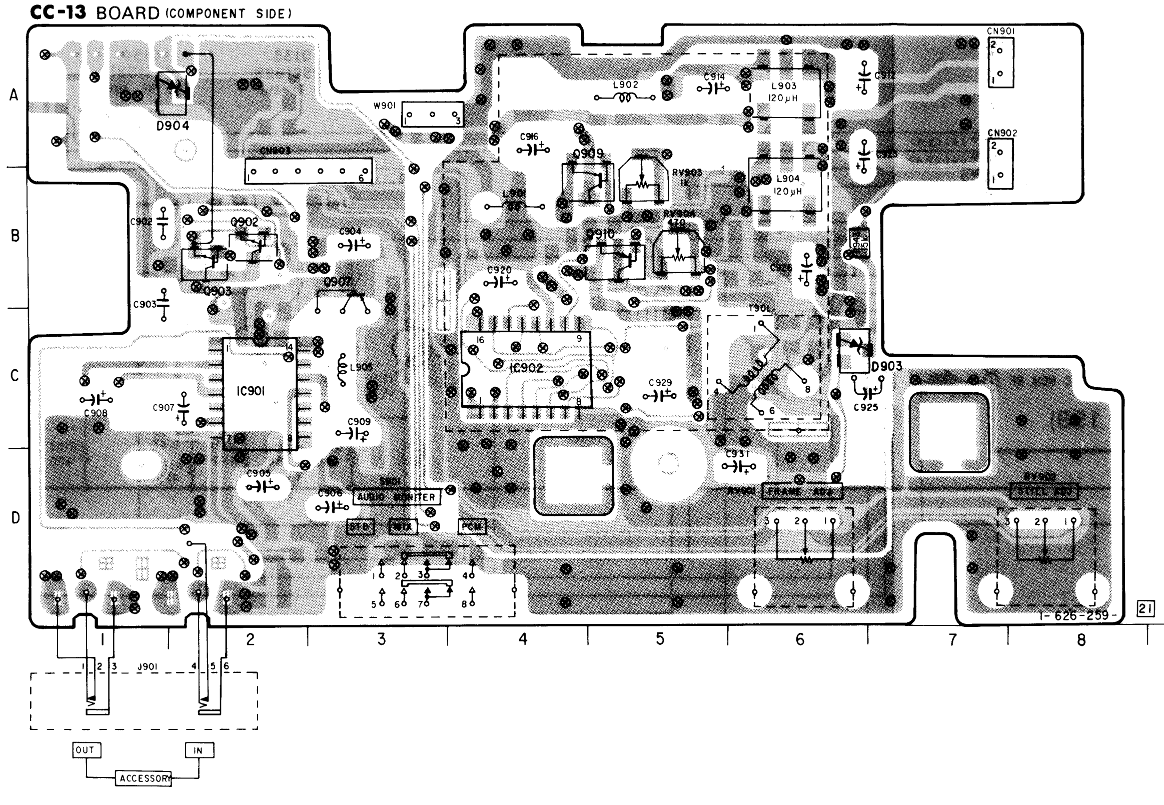

L301
L204
10
LOCK

VI-48 BOARD (CONDUCTOR SIDE)

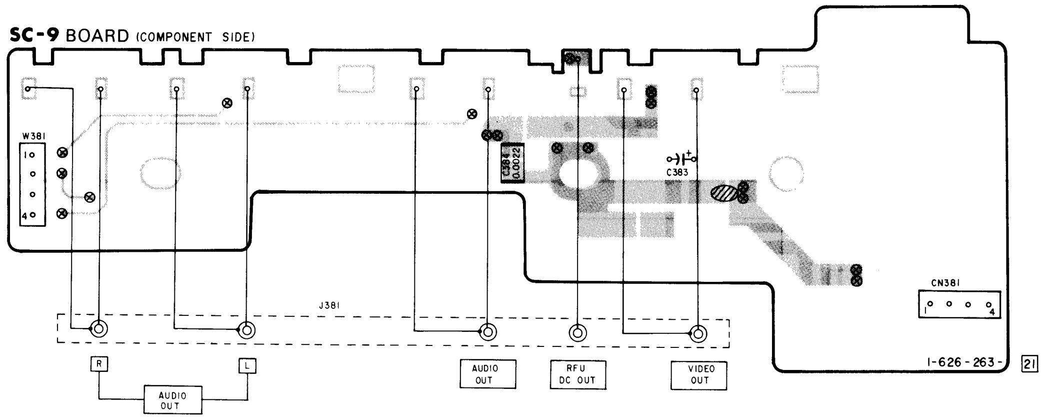

TO PCM AUDIO BLOCK
PC-32 BOARD
CN302
W203
VC-11 BOARD
VY-9 BOARD
VD-6 BOARD
IC202
D203
Q205
Q204
Q230
Q226
Q220
Q221
Q222
Q225
Q227
Q243
Q245
Q249
Q250
Q252
D201
Q209
Q211
Q212
Q241
Q202
Q247
Q248
Q201
Q203
D205
Q229
Q271
Q272
Q244
D202
Q281
Q282
Q224
Q223
1-626-253-
21
11
12
13
14
15
16
17
18
19
20

CC-13 BOARD	
CN901	A-7
CN902	A-7
CN903	B-2
CN904	A-15
CN906	A-16
D901	B-12
D902	B-11
D903	C-6
D904	A-2
IC901	C-2
IC902	C-4
Q901	A-16
Q902	B-2
Q903	B-2
Q904	B-15
Q905	B-15
Q907	B-3
Q908	C-15
Q909	B-5
Q910	B-5
Q911	C-12
Q912	C-11
RV901	D-6
RV902	D-8
RV903	B-5
RV904	B-5
W901	A-3

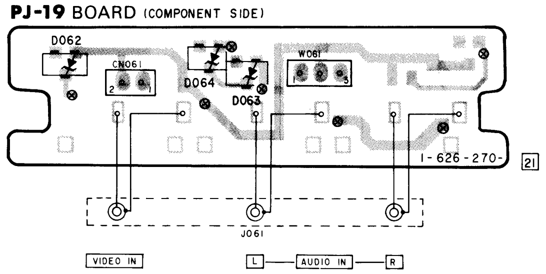
CC-13 BOARD (COMPONENT SIDE)


A
B
C
D
CN901
CN902
CN903
D904
W901
L902
L903 120μH
L904 120μH
Q909
RV903
RV904
Q910
Q902
Q903
Q907
IC901
IC902
D903
L901
S901
AUDIO MONITOR
STD
MIX
PCM
RV901 FRAME ADJ
RV902 STILL ADJ
J901
OUT
IN
ACCESSORY
1-626-259-
21
1
2
3
4
5
6
7
8

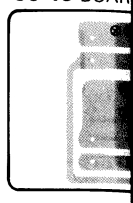
SC-9 BOARD (COMPONENT SIDE)

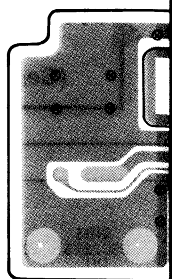

W381
C384
C383
CN381
J381
R
L
AUDIO OUT
AUDIO OUT
RFU DC OUT
VIDEO OUT
1-626-263-
21

PJ-19 BOARD (COMPONENT SIDE)

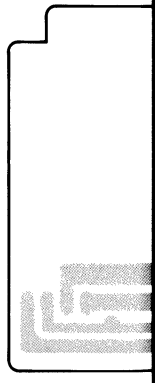

D062
CN061
D064
D063
W061
J061
1-626-270-
21
VIDEO IN
L
AUDIO IN
R

CC-13 BOAR

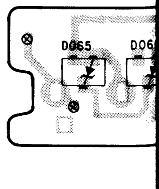


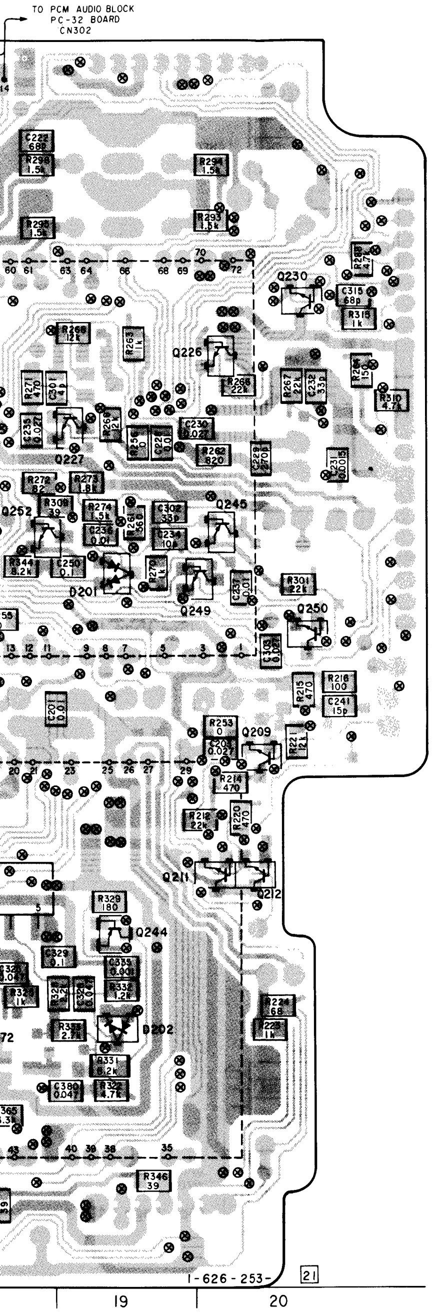


SC-9 BOARD (C



PJ-19 BOARD (C

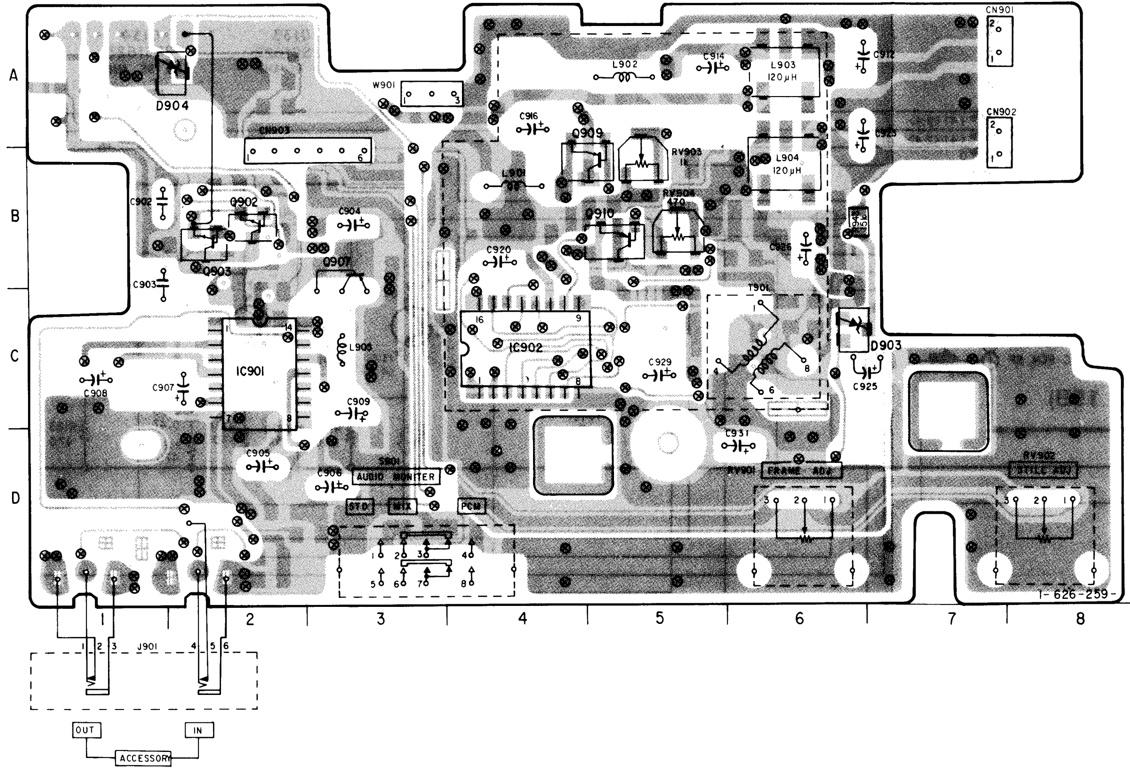



TO PCM AUDIO BLOCK
PC-32 BOARD
CN302
Q230
Q226
Q227
Q252
D201
Q245
Q249
Q250
Q209
Q211
Q212
Q244
D202
1-626-253-
21
19
20

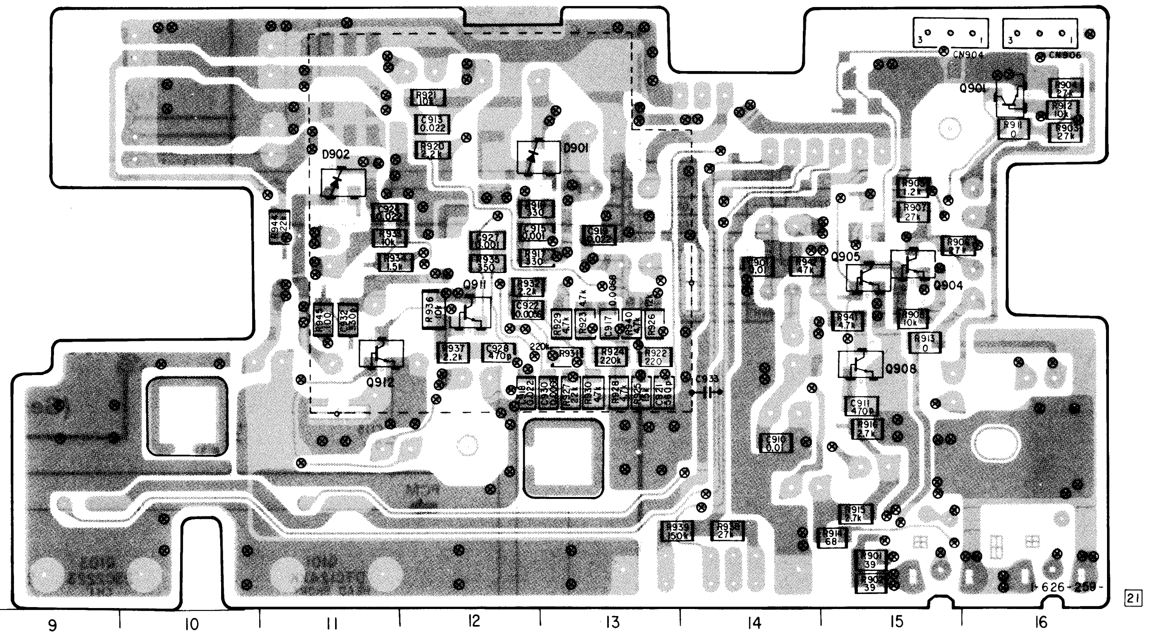
CC-13 BOARD

CN901	A-7
CN902	A-7
CN903	B-2
CN904	A-15
CN906	A-16
D901	B-12
D902	B-11
D903	C-6
D904	A-2
IC901	C-2
IC902	C-4
Q901	A-16
Q902	B-2
Q903	B-2
Q904	B-15
Q905	B-15
Q907	B-3
Q908	C-15
Q909	B-5
Q910	B-5
Q911	C-12
Q912	C-11
RV901	D-6
RV902	D-8
RV903	B-5
RV904	B-5
W901	A-3

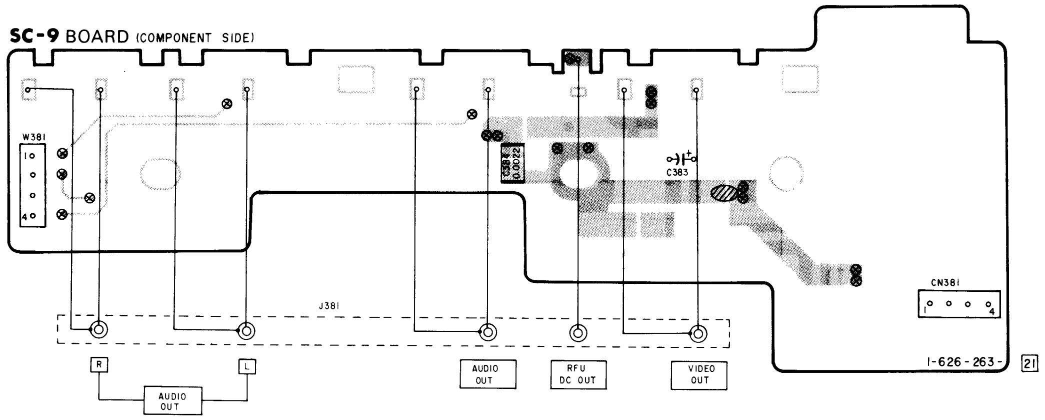
CC-13 BOARD (COMPONENT SIDE)


A
B
C
D
D904
CN903
W901
Q902
Q903
Q907
IC901
IC902
Q909
Q910
L902
L903 120μH
L904 120μH
T901
D903
CN901
CN902
S901 AUDIO MONITOR
STD
MIX
PCM
RV901 FRAME ADJ
RV902 STILL ADJ
J901
OUT
IN
ACCESSORY
1-626-259-
21
2
3
4
5
6
7
8

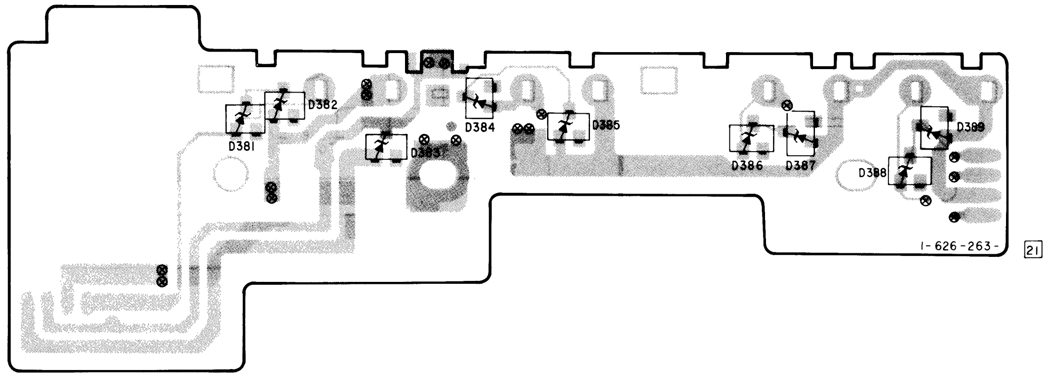
CC-13 BOARD (CONDUCTOR SIDE)


CN904
CN906
Q901
D902
D901
Q905
Q904
Q911
Q912
Q908
1-626-259-
21
9
10
11
12
13
14
15
16

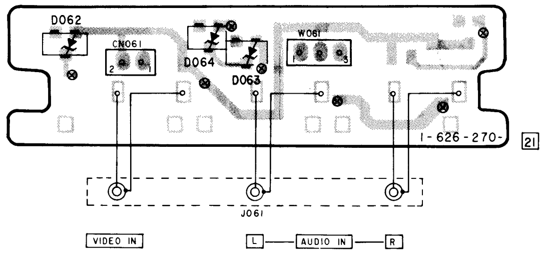
SC-9 BOARD (COMPONENT SIDE)


W381
C383
CN381
J381
R
L
AUDIO OUT
AUDIO OUT
RFU DC OUT
VIDEO OUT
1-626-263-
21

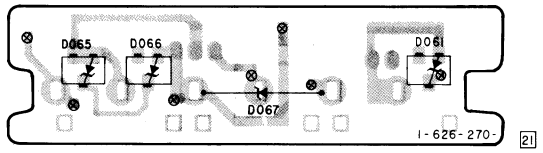
SC-9 BOARD (CONDUCTOR SIDE)


D381
D382
D383
D384
D385
D386
D387
D388
D389
1-626-263-
21

PJ-19 BOARD (COMPONENT SIDE)

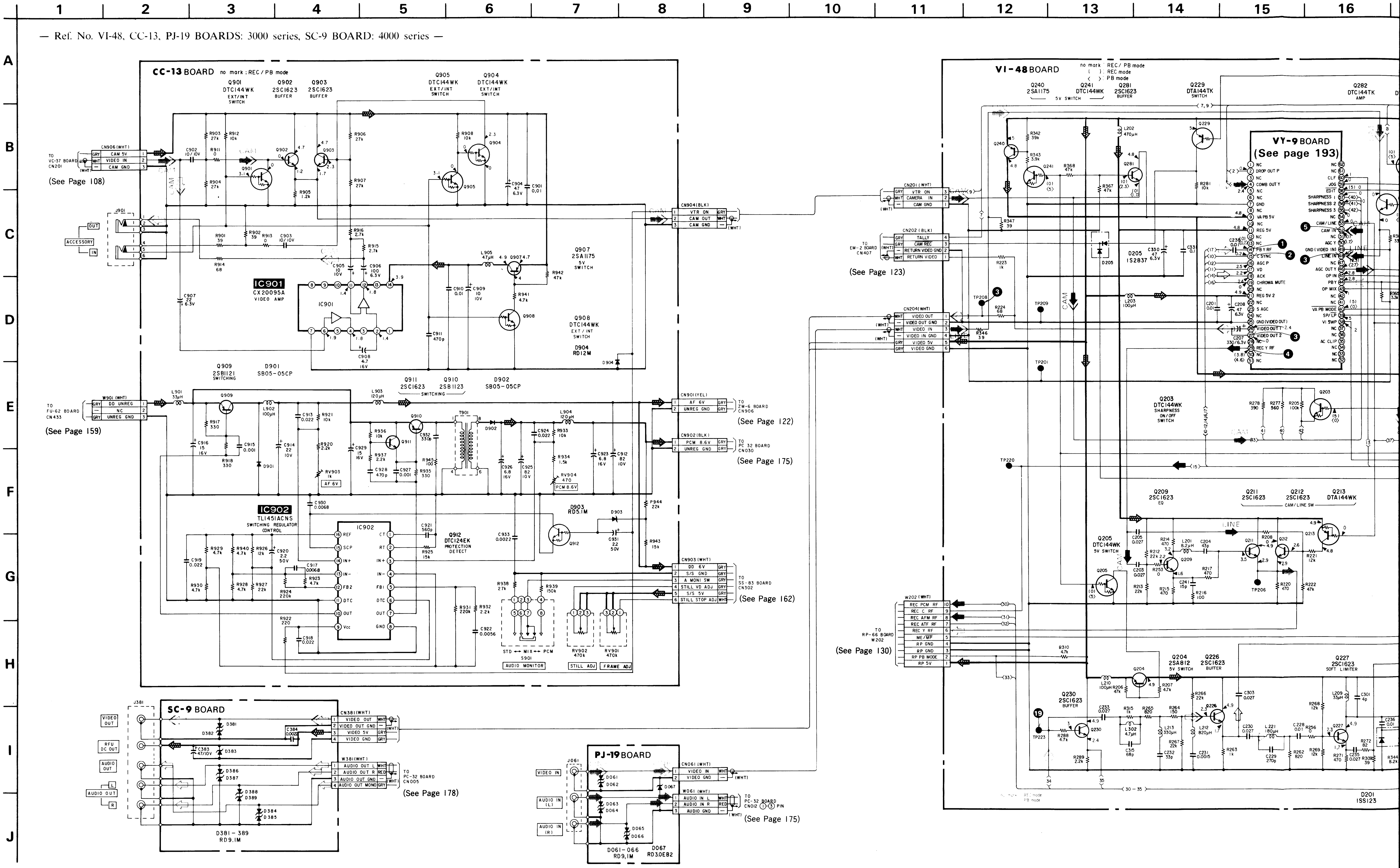

D062
CN061
D064
D063
W061
J061
VIDEO IN
L
AUDIO IN
R
1-626-270-
21

PJ-19 BOARD (CONDUCTOR SIDE)

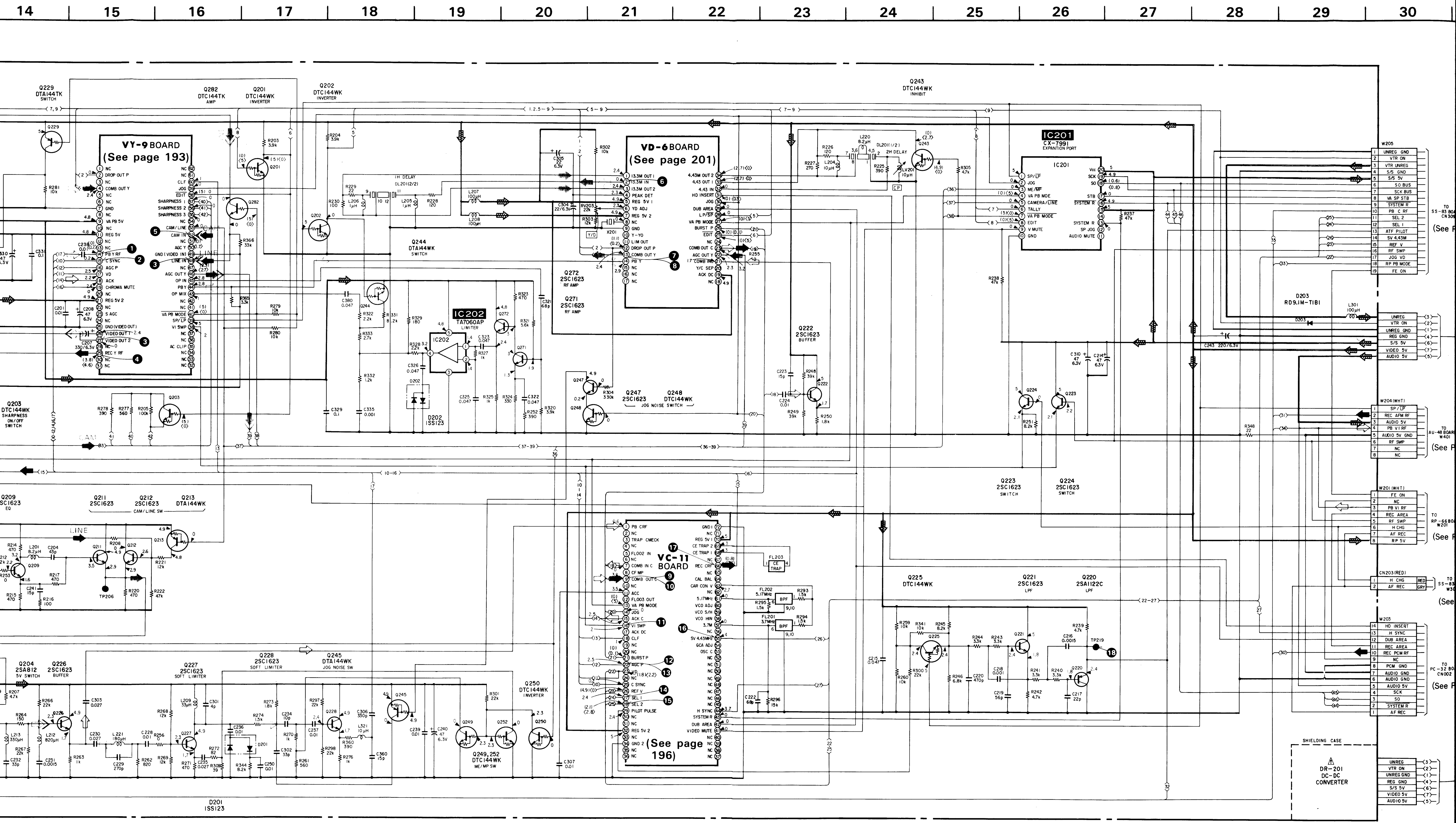

D065
D066
D067
D061
1-626-270-
21

VI-48 (VIDEO SIGNAL PROCESS), CC-13 (ACCESSORY INPUT/OUTPUT, SWITCHING POWER SUPPLY), SC-9 (VIDEO/AUDIO OUTPUT JACK), PJ-19 (VIDEO/AUDIO INPUT JACK) SCHEMATIC DIAGRAM

— Ref. No. VI-48, CC-13, PJ-19 BOARDS: 3000 series, SC-9 BOARD: 4000 series —


CC-13 BOARD no mark : REC / PB mode
Q901 DTC144WK EXT/INT SWITCH
Q902 2SC1623 BUFFER
Q903 2SC1623 BUFFER
Q905 DTC144WK EXT/INT SWITCH
Q904 DTC144WK EXT/INT SWITCH
TO VC-37 BOARD CN201 (See Page 108)
CN906 (WHT) CAM 5V VIDEO IN CAM GND
J901 OUT ACCESSORY IN
IC901 CX20095A VIDEO AMP
Q907 2SA1175 5V SWITCH
Q908 DTC144WK EXT/INT SWITCH
D904 RD12M
CN904 (BLK) VTR ON CAM OUT CAM GND
Q909 2SB1121 SWITCHING
D901 SB05-05CP
Q911 2SC1623 Q910 2SB1123 SWITCHING
D902 SB05-05CP
TO FU-62 BOARD CN433 (See Page 159)
W901 (WHT) DD UNREG NC UNREG GND
CN901 (YEL) AF 6V UNREG GND TO ZM-6 BOARD CN906 (See Page 122)
CN902 (BLK) PCM 8.6V UNREG GND TO PC-32 BOARD CN030 (See Page 175)
IC902 TL1451ACNS SWITCHING REGULATOR CONTROL
D903 RD5.1M
Q912 DTC124EK PROTECTION DETECT
CN903 (WHT) DD 6V S/S GND A MONI SW STILL VD ADJ S/S 5V STILL STOP ADJ TO SS-83 BOARD CN302 (See Page 162)
STD ← MIX → PCM S901 AUDIO MONITOR
RV902 470k STILL ADJ
RV901 470k FRAME ADJ
SC-9 BOARD
J381 VIDEO OUT RFU DC OUT AUDIO OUT AUDIO OUT L R
CN381 (WHT) VIDEO OUT VIDEO OUT GND VIDEO 5V VIDEO GND
W381 (WHT) AUDIO OUT L AUDIO OUT R AUDIO OUT GND AUDIO OUT MONO TO PC-32 BOARD CN005 (See Page 178)
D381 - 389 RD9.1M
PJ-19 BOARD
J061 VIDEO IN AUDIO IN (L) AUDIO IN (R)
CN061 (WHT) VIDEO IN VIDEO GND
W061 (WHT) AUDIO IN L AUDIO IN R AUDIO GND TO PC-32 BOARD CN012 ①-③ PIN (See Page 175)
D061-066 RD9.1M D067 RD3.0EB2
VI-48 BOARD no mark : REC / PB mode ( ) : REC mode < > : PB mode
Q240 2SA1175 Q241 DTC144WK 5V SWITCH
Q281 2SC1623 BUFFER
Q229 DTA144TK SWITCH
Q282 DTC144TK AMP
VY-9 BOARD (See page 193)
CN201 (WHT) VTR ON CAMERA IN CAM GND
TO EM-2 BOARD CN407 (See Page 123)
CN202 (BLK) TALLY CAM REC RETURN VIDEO GND RETURN VIDEO
CN204 (WHT) VIDEO OUT VIDEO OUT GND VIDEO IN VIDEO IN GND VIDEO 5V VIDEO GND
D205 1S2837
Q203 DTC144WK SHARPNESS ON/OFF SWITCH
TO RP-66 BOARD W202 (See Page 130)
W202 (WHT) REC PCM RF REC C RF REC AFM RF REC ATF RF REC Y RF ME/MP RP GND RP GND RP PB MODE RP 5V
Q205 DTC144WK 5V SWITCH
Q209 2SC1623 EQ
Q211 2SC1623 Q212 2SC1623 Q213 DTA144WK CAM/LINE SW
Q204 2SA812 5V SWITCH
Q226 2SC1623 BUFFER
Q230 2SC1623 BUFFER
Q227 2SC1623 SOFT LIMITER
D201 1SS123

GRAM


14
15
16
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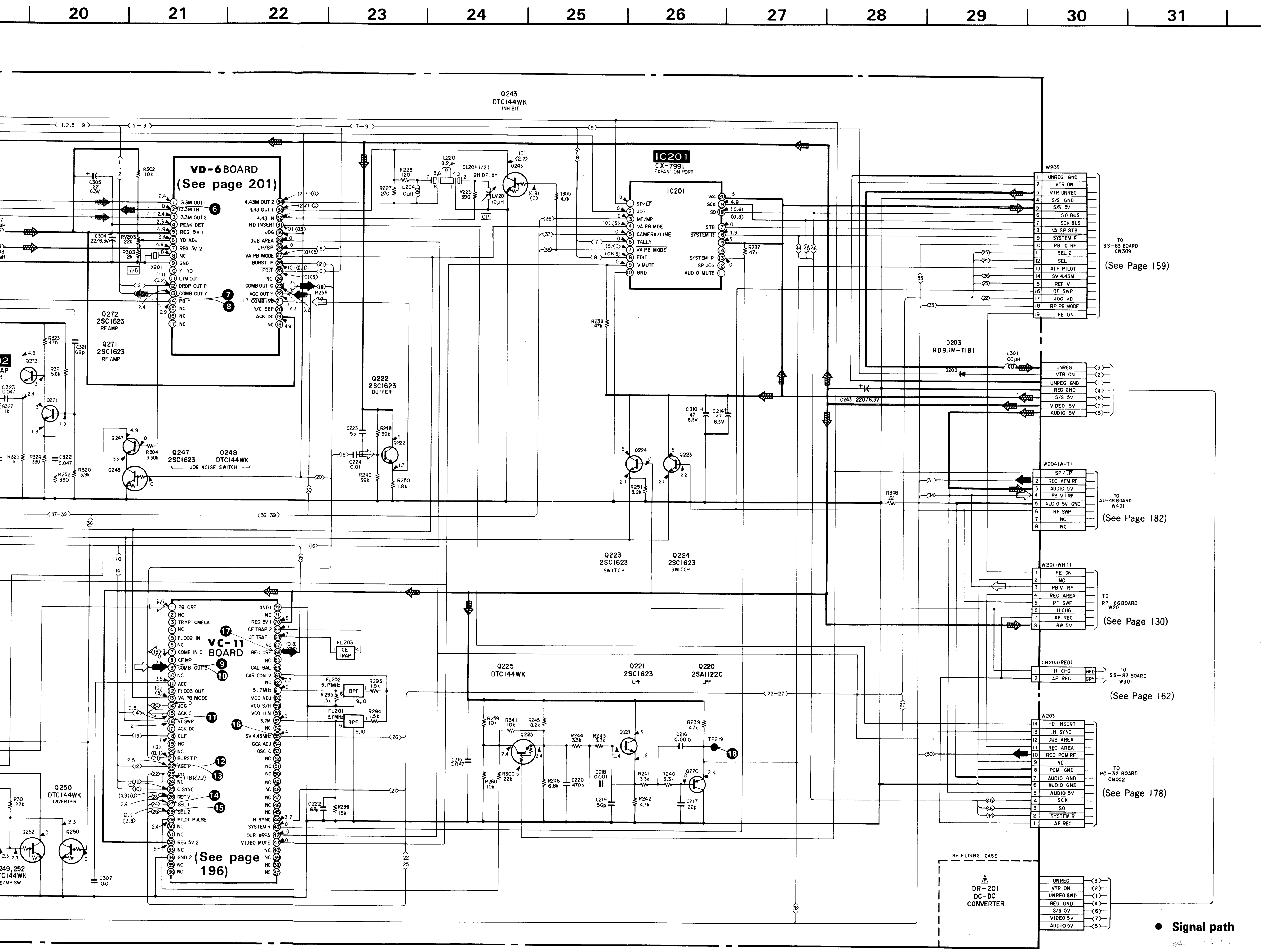
22
23
24
25
26
27
28
29
30
VY-9 BOARD
(See page 193)
VD-6 BOARD
(See page 201)
VC-11 BOARD
(See page 196)
IC201
CX-7991
EXPANTION PORT
IC202
TA7060AP
LIMITER
Q229 DTA144TK SWITCH
Q282 DTC144TK AMP
Q201 DTC144WK INVERTER
Q202 DTC144WK INVERTER
Q243 DTC144WK INHIBIT
Q244 DTA144WK SWITCH
Q272 2SC1623 RF AMP
Q271 2SC1623 RF AMP
Q247 2SC1623
Q248 DTC144WK
JOG NOISE SWITCH
Q222 2SC1623 BUFFER
D203 RD9.1M-T1B1
Q203 DTC144WK SHARPNESS ON/OFF SWITCH
D202 1SS123
Q223 2SC1623 SWITCH
Q224 2SC1623 SWITCH
Q209 2SC1623 EQ
Q211 2SC1623
Q212 2SC1623
Q213 DTA144WK
CAM/LINE SW
Q225 DTC144WK
Q221 2SC1623 LPF
Q220 2SA1122C LPF
Q204 2SA812 5V SWITCH
Q226 2SC1623 BUFFER
Q227 2SC1623 SOFT LIMITER
Q228 2SC1623 SOFT LIMITER
Q245 DTA144WK JOG NOISE SW
Q250 DTC144WK INVERTER
Q249, 252 DTC144WK ME/MP SW
D201 1SS123
W205
W204 (WHT)
W201 (WHT)
CN203 (RED)
W203
TO SS-83 BOARD CN306
TO AU-48 BOARD W401
TO RP-66 BOARD W201
TO SS-83 W30
TO PC-32 BOARD CN002
SHIELDING CASE
DR-201 DC-DC CONVERTER


20
21
22
23
24
25
26
27
28
29
30
31
Q243 DTC144WK INHIBIT
IC201 CX-7991 EXPANTION PORT
VD-6 BOARD (See page 201)
Q272 2SC1623 RF AMP
Q271 2SC1623 RF AMP
Q247 2SC1623
Q248 DTC144WK
JOG NOISE SWITCH
Q222 2SC1623 BUFFER
DL201(1/2) 2H DELAY
D203 RD9.1M-TB1
L301 100μH
Q223 2SC1623 SWITCH
Q224 2SC1623 SWITCH
VC-11 BOARD (See page 196)
Q225 DTC144WK
Q221 2SC1623 LPF
Q220 2SA1122C LPF
Q250 DTC144WK INVERTER
FL203 CE TRAP
FL202 5.17MHz BPF
FL201 3.7MHz BPF
TP219
W205
UNREG GND
VTR ON
VTR UNREG
S/S GND
S/S 5V
SO BUS
SCK BUS
VA SP STB
SYSTEM R
PB C RF
SEL 2
SEL 1
ATF PILOT
SV 4.43M
REF V
RF SWP
JOG VD
RP PB MODE
FE ON
TO SS-83 BOARD CN309
(See Page 159)
UNREG
VTR ON
UNREG GND
REG GND
S/S 5V
VIDEO 5V
AUDIO 5V
W204(WHT)
SP/LP
REC AFM RF
AUDIO 5V
PB VI RF
AUDIO 5V GND
RF SWP
NC
TO AU-48 BOARD W401
(See Page 182)
W201(WHT)
FE ON
PB VI RF
REC AREA
H CHG
AF REC
RP 5V
TO RP-66BOARD W201
(See Page 130)
CN203(RED)
H CHG
AF REC
TO SS-83 BOARD W301
(See Page 162)
W203
HD INSERT
H SYNC
DUB AREA
REC AREA
REC PCM RF
PCM GND
AUDIO GND
SCK
SO
SYSTEM R
TO PC-32 BOARD CN002
(See Page 178)
SHIELDING CASE
DR-201 DC-DC CONVERTER

Note (Printed Wiring Board)

- ○— : indicates a lead wire mounted on the component side.
- ●— : indicates a lead wire mounted on the conductor side.
- ⊗ : Through hole.
- ▨ : Pattern from the side which enables seeing.

- The ● number is the reference number in the waveform diagram.
- Digital transistor (VI-48: Q201, 202, 203, 205, 213, 225, 229, 241, 243, 244, 245, 248, 249, 250, 252, 282, CC-13: Q901, 904, 905, 908, 912) transistor with resistors.
  Refer to the VI-48 CC-13 boards schematic diagrams for digital transistor.

Note

Conductor side:	Parts on the conductor side being seen from the conductor are stated.
Component side:	Parts on the component side being seen from the component are stated.

Regarding color indication of pattern

- * Pattern being seen in the state from the surface side are indicated in gray pattern.
- * Pattern being seen in the state of the rear surface side is indicated in green pattern.

Note (Schematic Diagram)

- **Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.**
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors are in μF unless otherwise noted. pF: μμF
  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, chip resistor are 1/10W unless otherwise noted.
  kΩ : 1000Ω, MΩ : 1000kΩ.
- All variable and semi-fixed resistors have characteristics curve B, unless otherwise noted.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.
- ▭ : panel disignation.
- ▭ : adjustment for repair.
- ▬ : B + line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- All voltage are dc measured with a VOM (10MΩ)
- ⇨ indicates the I/O direction of B lines (+, −).
- The ● number is the reference number in the waveform diagram.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- **Signal path**

➡ :REC CHROMA SIGNAL
⇨ :PB CHROMA SIGNAL
➡ :REC AUDIO SIGNAL
⇨ :PB AUDIO SIGNAL

SS-83 (SERVO, SYSTEM CONTROL), DR-45 (DRUM/CAPSTAN MOTOR DRIVE, TAPE END SENSOR, TS-80 (SERVO, TAPE TOP SENSO

— Ref. No. TS-80 BOARD: 4000 series, SS-83 BOARD: 5000 series, DR-45 BOARD: 6000 series —

Note (Printed Wiring Board)

- ○— : indicates a lead wire mounted on the component side.
- ●— : indicates a lead wire mounted on the conductor side.
- ⊗ : Through hole.
- ▨ : Pattern from the side which enables seeing.
- * : Pattern of the rear side.
- The ● number is the reference number in the waveform diagram.
- Digital transistor (SS-83: Q154, 158, 159, 162, 163, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 178 188, 189, 190, 191, 194, 195, 196, 197, 198, 200, 207, 208, 209, 210, 211, 212, 213, TS-80: Q452, DR-45: Q502) transistor with resistors.
  Refer to the SS-83, TS-80, DR-45 boards schematic diagrams for digital transistor.

Note	
Conductor side:	Parts on the conductor side being seen from the conductor are stated.
Component side:	Parts on the component side being seen from the component are stated.

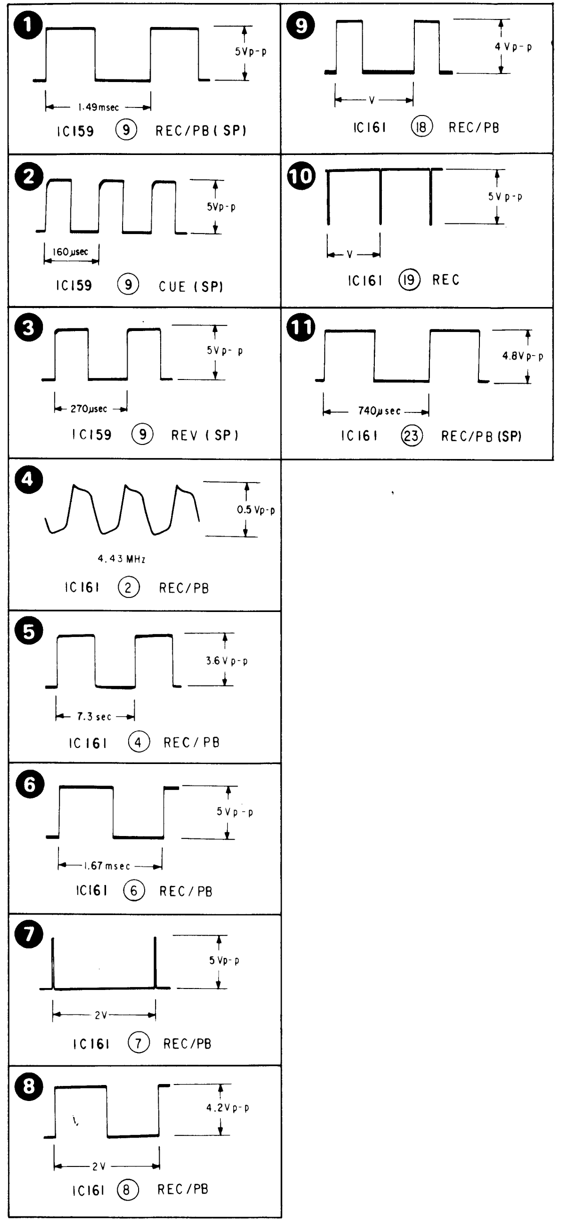
Regarding color indication of pattern
- * Pattern being seen in the state from the surface side are indicated in gray pattern.
- * Pattern being seen in the state of the rear surface side is indicated in green pattern.

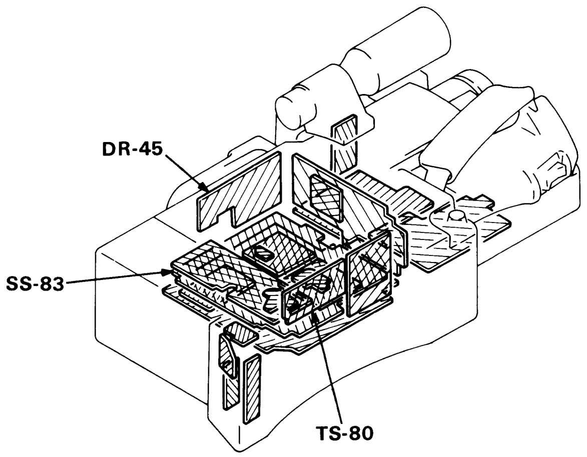
Note (Schematic Diagram)

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors are in μF unless otherwise noted. pF: μμF
  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, chip resistor are 1/10W unless otherwise noted.
  kΩ : 1000Ω, MΩ : 1000kΩ.
- All variable and semi-fixed resistors have characteristics curve B, unless otherwise noted.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.
- ☐ : panel disignation.
- ☐ : adjustment for repair.
- ▬ : B + line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- All voltage are dc measured with a VOM (10MΩ)
- ⇨ indicates the I/O direction of B lines (+, −).
- The ● number is the reference number in the waveform diagram.

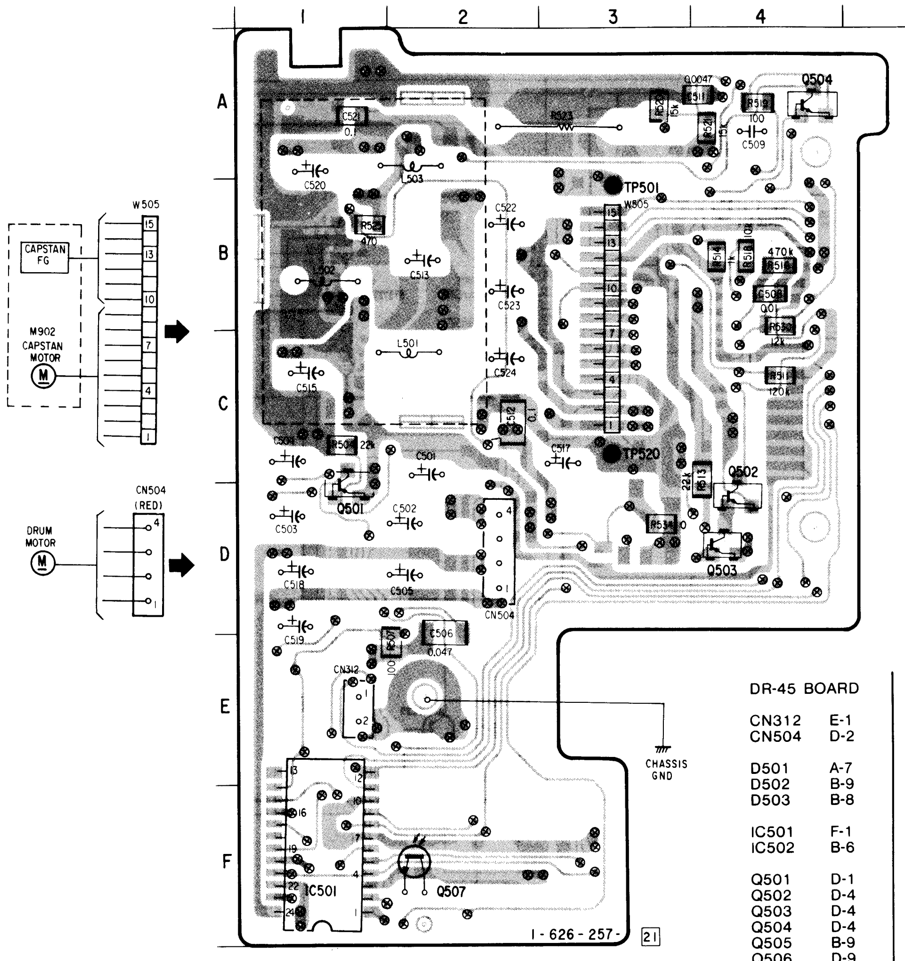
When indicating parts by reference number, please include the board name.

SS-83 BOARD(SERVO)

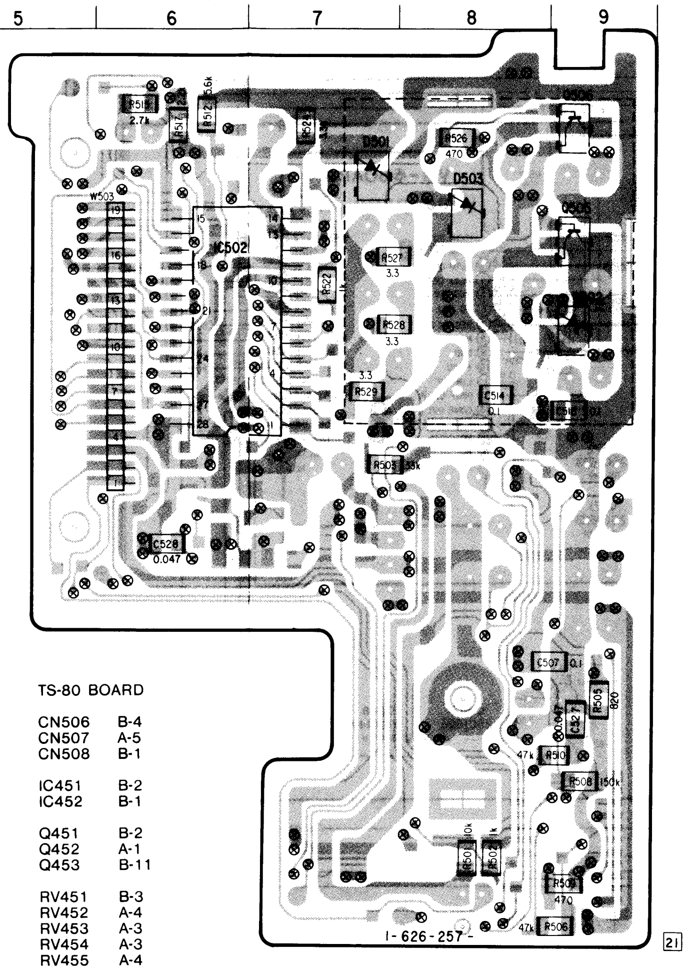



DR-45
SS-83
TS-80

DR-45 BOARD (COMPONENT SIDE)


1
2
3
4
A
B
C
D
E
F
W505
CAPSTAN FG
M902 CAPSTAN MOTOR
M
DRUM MOTOR
CN504 (RED)
CHASSIS GND
TP501
TP502
Q501
Q502
Q503
Q504
IC501
Q507
CN312
1-626-257-
21

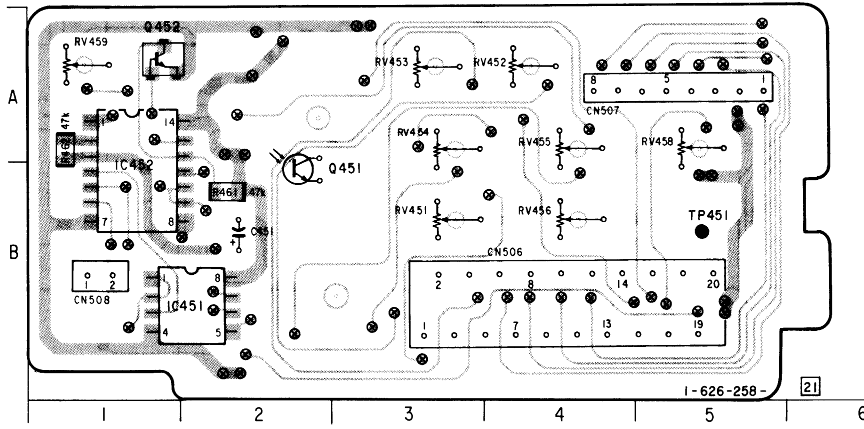
DR-45 BOARD (CONDUCTOR SIDE)


5
6
7
8
9
IC502
D501
D502
D503
Q505
Q506
1-626-257-
21

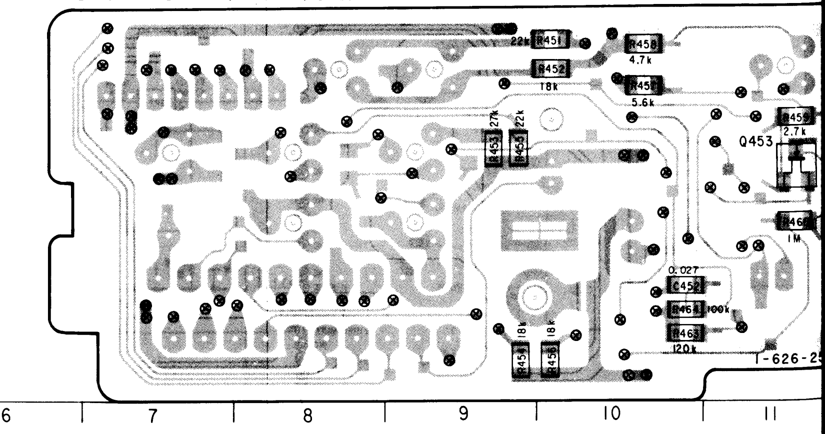
DR-45 BOARD	
CN312	E-1
CN504	D-2
D501	A-7
D502	B-9
D503	B-8
IC501	F-1
IC502	B-6
Q501	D-1
Q502	D-4
Q503	D-4
Q504	D-4
Q505	B-9
Q506	D-9
Q507	F-2
TP501	B-3
TP502	C-3

TS-80 BOARD	
CN506	B-4
CN507	A-5
CN508	B-1
IC451	B-2
IC452	B-1
Q451	B-2
Q452	A-1
Q453	B-11
RV451	B-3
RV452	A-4
RV453	A-3
RV454	A-3
RV455	A-4
RV456	B-4
RV458	B-5
RV459	A-1
TP451	B-5

TS-80 BOARD (COMPONENT SIDE)

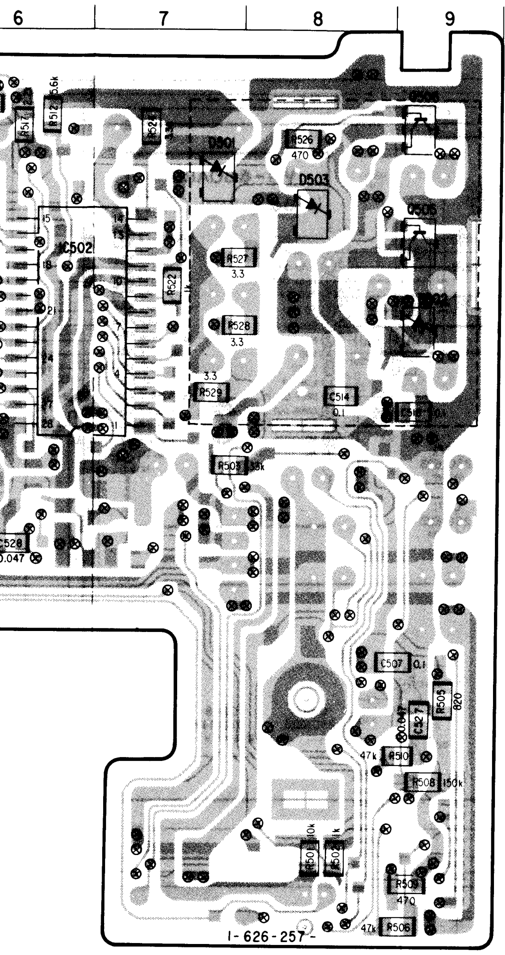

A
B
1
2
3
4
5
6
Q452
RV459
IC452
IC451
CN508
Q451
RV453
RV452
RV454
RV455
RV458
RV451
RV456
TP451
CN506
CN507
1-626-258-
21

TS-80 BOARD (CONDUCTOR SIDE)

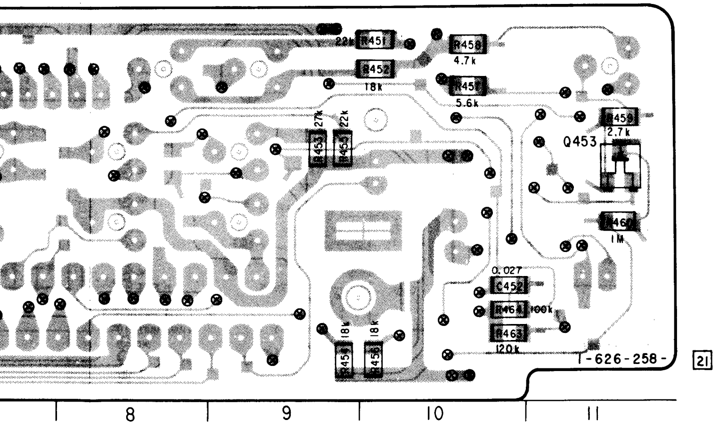

7
8
9
10
11
Q453
1-626-2

PE END SENSOR, TS-80 (SERVO, TAPE TOP SENSOR) PRINTED WIRING BOARD

OARD (CONDUCTOR SIDE)


6
7
8
9
IC502
D501
D503
Q505
R526
470
R527
3.3
R528
3.3
R529
C514
R507
R503
Q501
C507
R505
R510
R508
R509
R506
470
47k
150k
1-626-257-
21

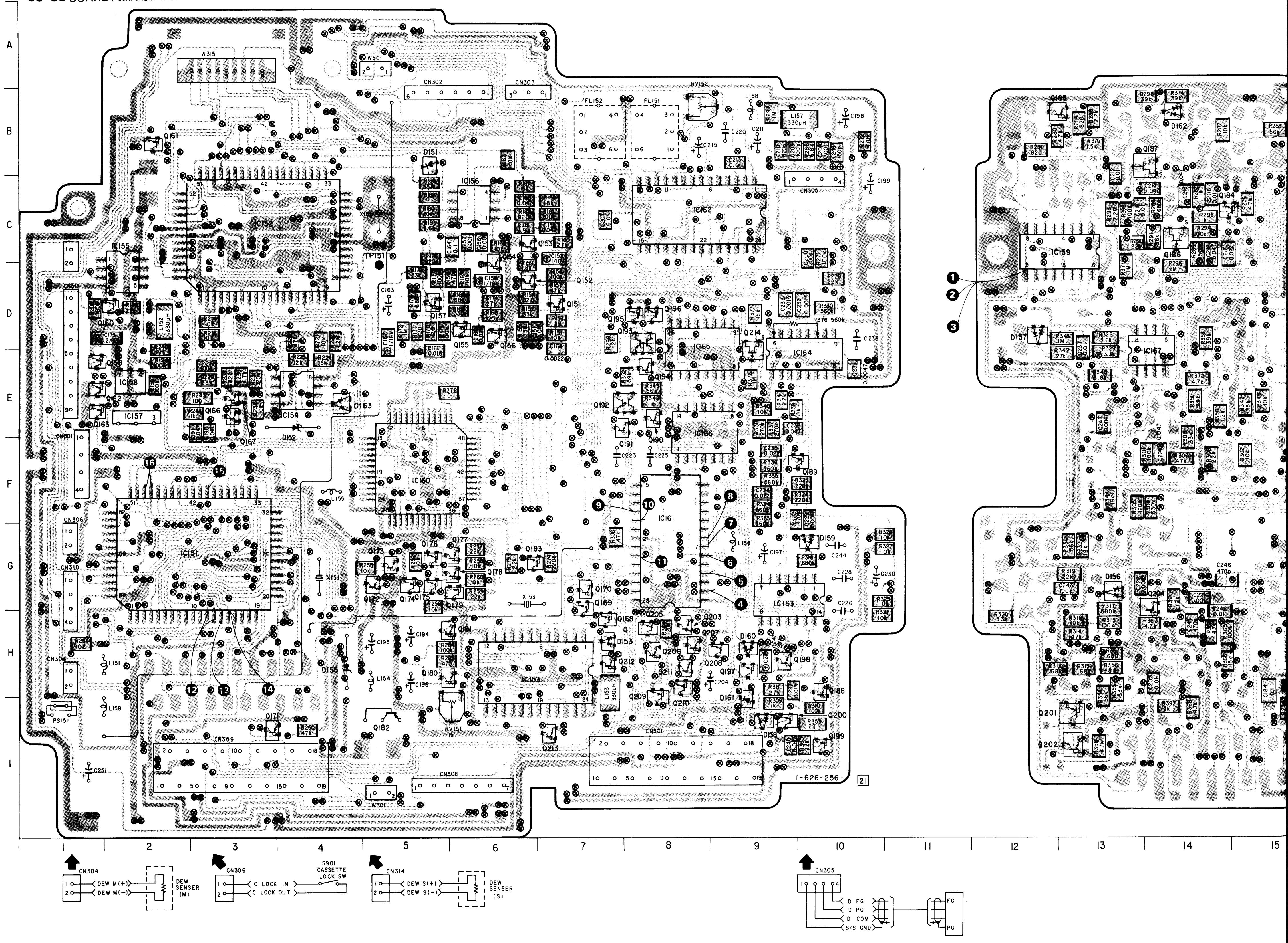
ARD (CONDUCTOR SIDE)


8
9
10
11
R451
R452
R453
R454
R458
R459
R460
R461
R462
R463
R455
R456
Q453
22k
4.7k
18k
5.6k
2.7k
1M
0.027
120k
1-626-258-
21

SS-83 BOARD

CN301	F-1
CN302	B-5
CN303	B-6
CN304	H-1
CN305	C-10
CN306	G-1
CN307	H-19
CN308	I-6
CN309	I-3
CN310	G-1
CN311	D-1
CN314	C-1
CN501	I-8
D151	B-5
D152	E-4
D153	H-7
D154	G-21
D155	H-4
D156	G-13
D157	D-12
D158	I-8
D159	G-10
D160	H-9
D161	I-8
D162	B-14
D163	E-4
IC151	G-2
IC152	C-3
IC153	H-6
IC154	E-4
IC155	D-2
IC156	C-6
IC157	E-2
IC158	E-2
IC159	C-12
IC160	F-5
IC161	F-8
IC162	C-8
IC163	G-9
IC164	D-10
IC165	D-8
IC166	E-8
IC167	E-14
Q151	D-7
Q152	D-6
Q153	C-6
Q154	C-6
Q155	D-6
Q156	D-6
Q157	D-5
Q158	E-1
Q159	E-21
Q160	D-2
Q161	B-2
Q162	E-1
Q163	E-1
Q166	E-3
Q167	E-3
Q168	H-7
Q169	G-7
Q170	G-7
Q171	I-3
Q172	G-5
Q173	G-5
Q174	G-5
Q175	G-5
Q176	G-5
Q177	G-6
Q178	G-6
Q179	G-6
Q180	H-5
Q181	H-5
Q182	I-5
Q183	G-6
Q184	C-14
Q185	B-13
Q186	C-14
Q187	B-14
Q188	H-10
Q189	F-10
Q190	E-8
Q191	E-7
Q192	E-7
Q193	D-8
Q194	E-8
Q195	D-8
Q196	D-8
Q197	H-9
Q198	H-9
Q199	I-10
Q200	I-8
Q201	I-13
Q202	I-13
Q203	H-8
Q204	H-14
Q205	H-8
Q206	H-8
Q207	H-8
Q208	H-9
Q209	I-8
Q210	H-8
Q211	H-8
Q212	H-7
Q213	I-7
Q214	D-9
RV151	I-5
RV152	B-8
TP151	D-5

SS-83 BOARD (CONPONENT SIDE)


A
B
C
D
E
F
G
H
I
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6
7
8
9
10
11
12
13
14
15
W315
W501
CN302
CN303
CN305
CN306
CN310
CN311
CN301
CN304
CN309
CN308
CN501
W301
IC151
IC152
IC153
IC154
IC155
IC156
IC157
IC158
IC159
IC160
IC161
IC162
IC163
IC164
IC165
IC166
IC167
RV151
RV152
FL151
FL152
TP151
X151
X153
PS151
L151
L152
L154
L155
L156
L157
L158
L159
1-626-256-
21
CN304
1
2
DEW M(+)
DEW M(−)
DEW
SENSER
(M)
CN306
C LOCK IN
C LOCK OUT
S901
CASSETTE
LOCK SW
CN314
DEW S(+)
DEW S(−)
DEW
SENSER
(S)
CN305
1
4
D FG
D PG
D COM
S/S GND
FG
PG
❶
❷
❸
❹
❺
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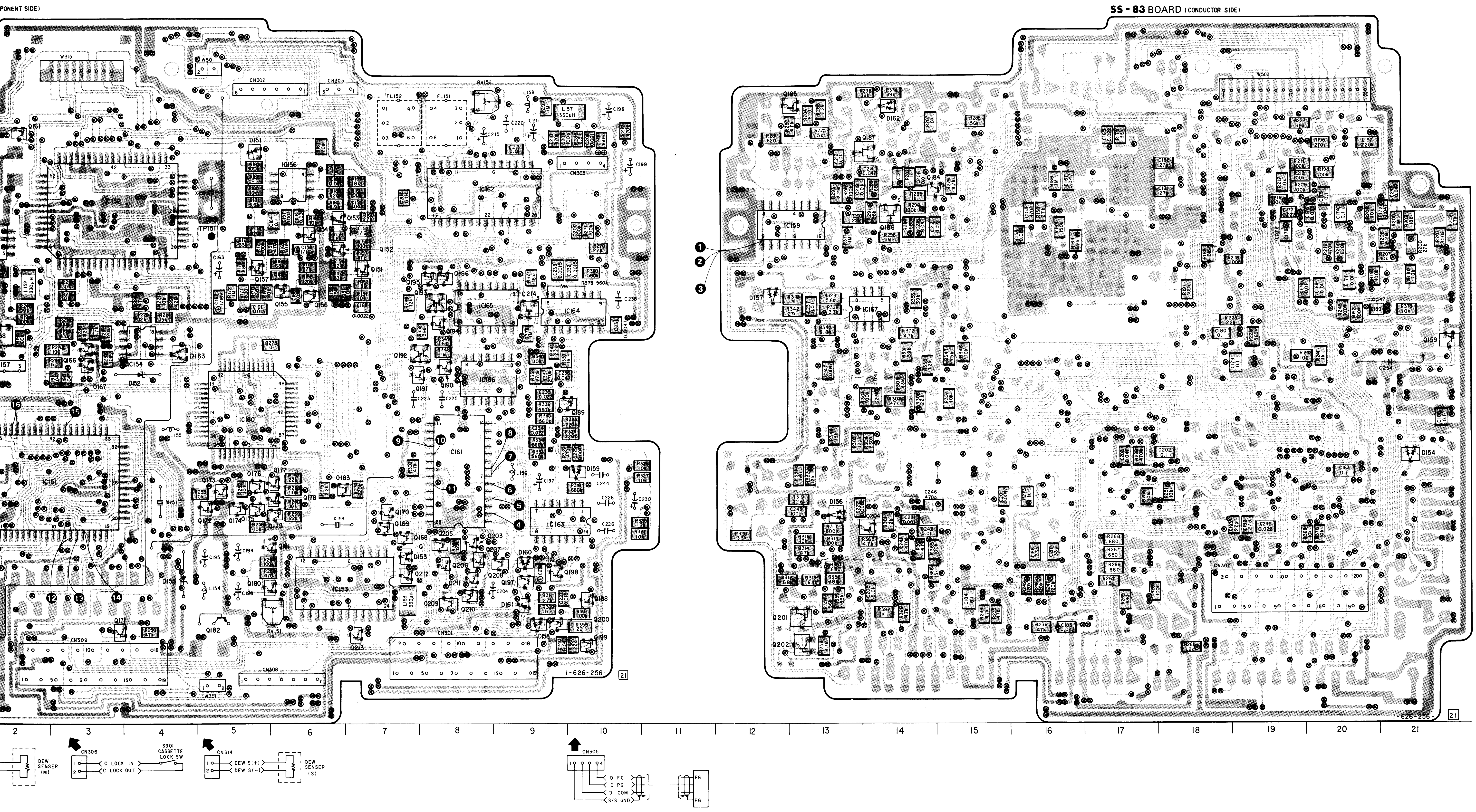
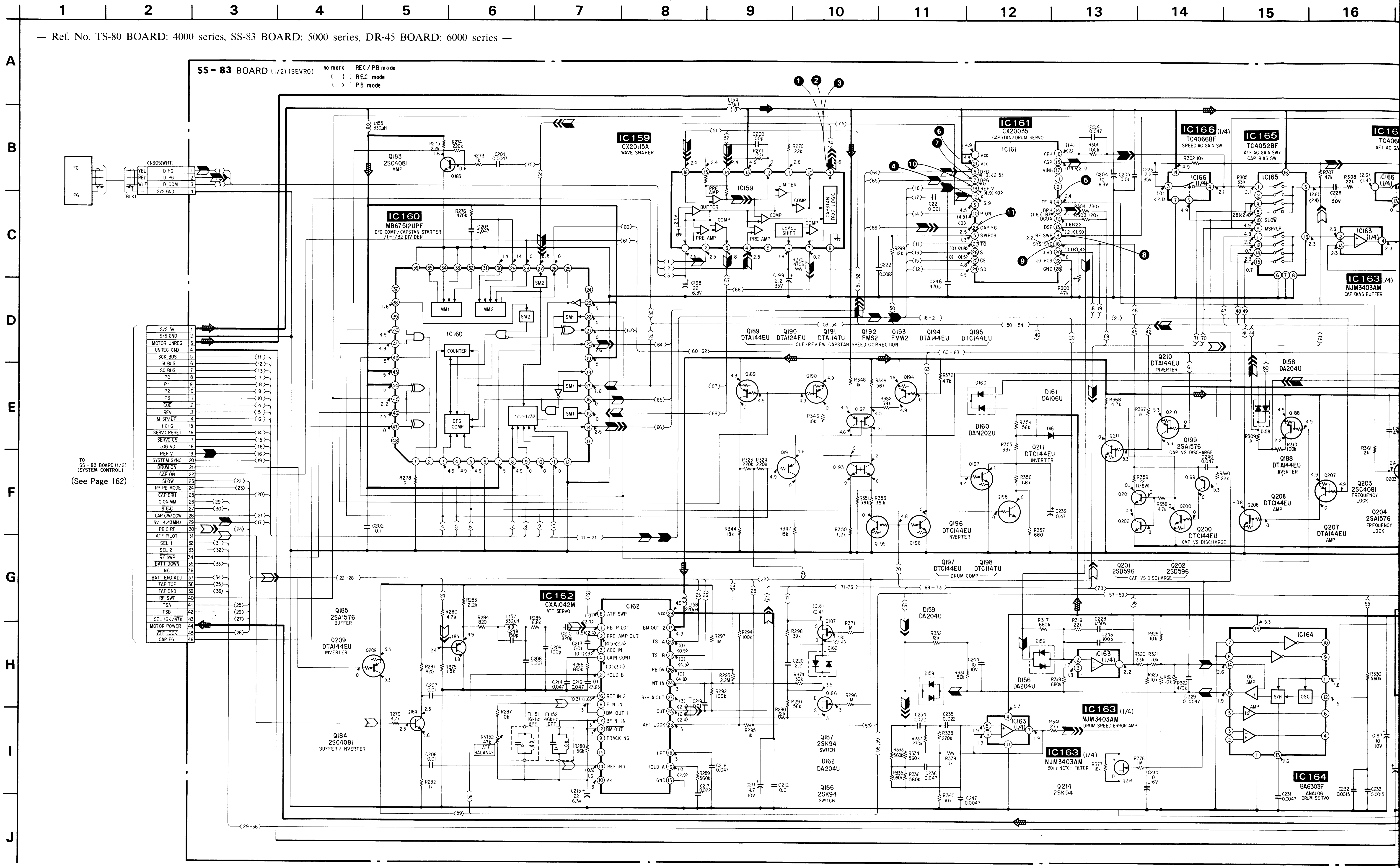


PONENT SIDE)

SS-83 BOARD (CONDUCTOR SIDE)

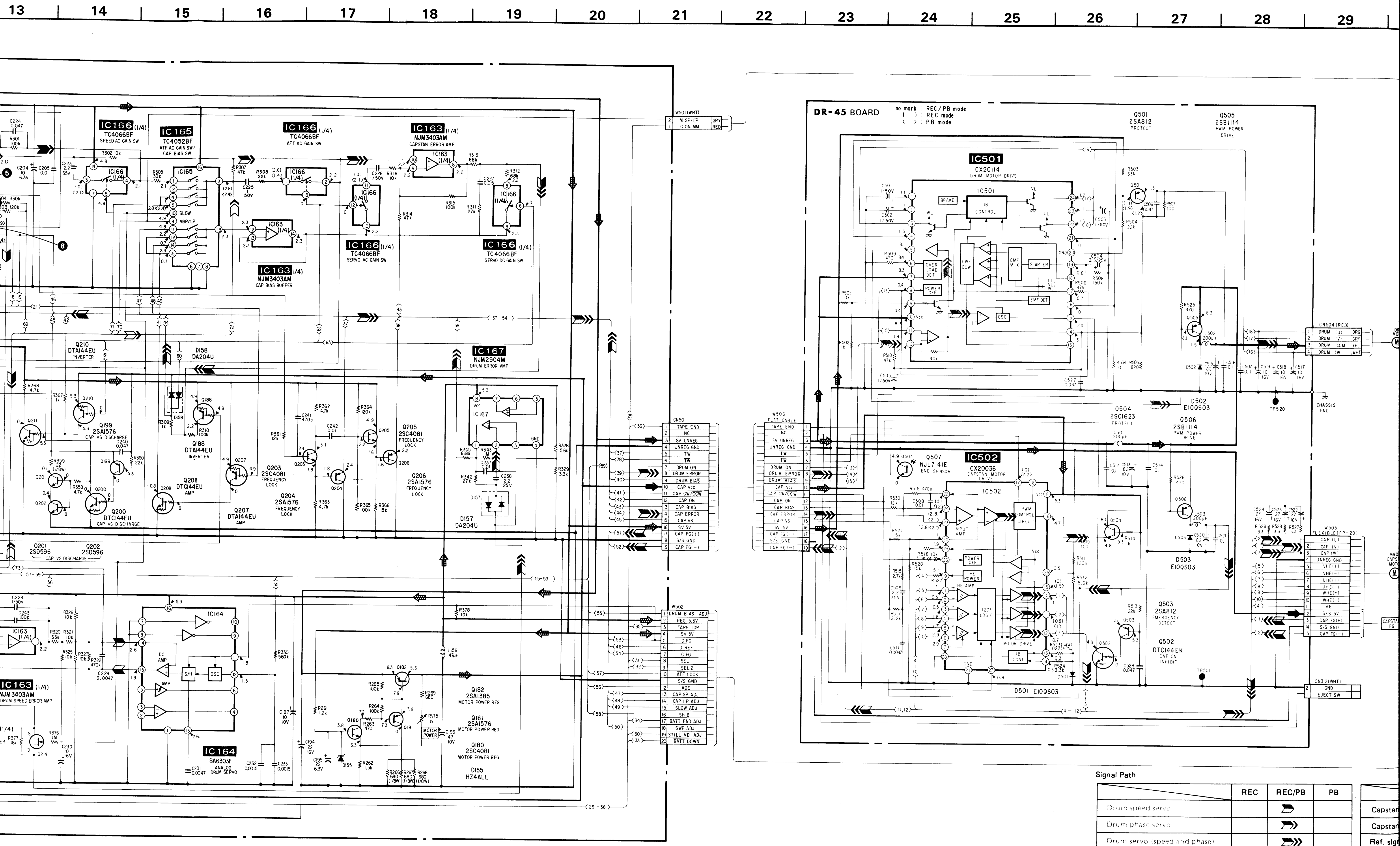
W315
W501
CN302
CN303
FL152
FL151
RV152
L158
L157 330μH
IC156
IC152
IC162
CN305
TP151
IC165
IC164
IC160
IC166
IC161
IC151
X151
X153
IC163
IC153
L151 330μH
RV151
CN309
CN308
W301
CN501
1-626-256-21
W502
IC159
IC167
D157
D162
D154
D156
Q159
CN307
R268 680
R267 680
R266 680
C254
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
DEW SENSER (M)
CN306
C LOCK IN
C LOCK OUT
S901 CASSETTE LOCK SW
CN314
DEW S(+)
DEW S(−)
DEW SENSER (S)
D FG
D PG
D COM
S/S GND
FG
PG

SS-83 (SERVO), DR-45 (DRUM/CAPSTAN MOTOR DRIVE, TAPE END SENSOR), TS-80 (SERVO, TAPE TOP SENSOR) SCHEMATIC DIAGRAM



— Ref. No. TS-80 BOARD: 4000 series, SS-83 BOARD: 5000 series, DR-45 BOARD: 6000 series —

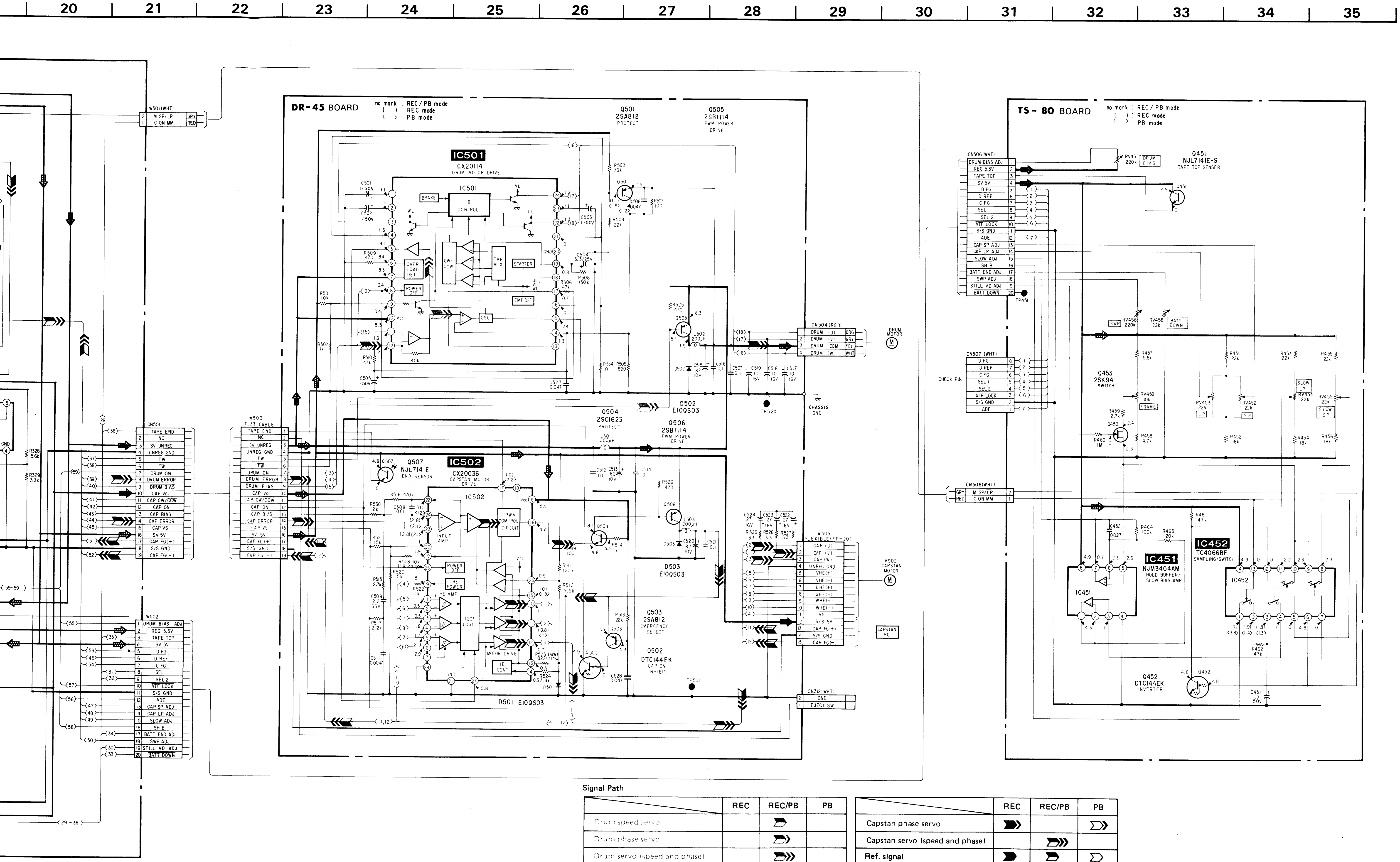
SS-83 BOARD (1/2) (SEVRO)
no mark : REC/PB mode
( ) : REC mode
< > : PB mode
FG
PG
CN305(WHT)
TO SS-83 BOARD (1/2) (SYSTEM CONTROL)
(See Page 162)
IC160 MB67512UPF DFG COMP/CAPSTAN STARTER 1/1-1/32 DIVIDER
IC159 CX20115A WAVE SHAPER
IC161 CX20035 CAPSTAN/DRUM SERVO
IC166 (1/4) TC4066BF SPEED AC GAIN SW
IC165 TC4052BF ATF AC GAIN SW/CAP BIAS SW
IC163 (1/4) NJM3403AM CAP BIAS BUFFER
IC162 CXA1042M ATF SERVO
IC163 (1/4) NJM3403AM DRUM SPEED ERROR AMP
IC163 (1/4) NJM3403AM 30Hz NOTCH FILTER
IC164 BA6303F ANALOG DRUM SERVO
Q183 2SC4081 AMP
Q185 2SA1576 BUFFER
Q209 DTA144EU INVERTER
Q184 2SC4081 BUFFER/INVERTER
Q189 DTA144EU
Q190 DTA124EU
Q191 DTA114TU
Q192 FMS2
Q193 FMW2
Q194 DTA144EU
Q195 DTC144EU
CUE/REVIEW CAPSTAN SPEED CORRECTION
Q196 DTC144EU INVERTER
Q197 DTC144EU
Q198 DTC114TU
DRUM COMP
Q187 2SK94 SWITCH
D162 DA204U
Q186 2SK94 SWITCH
D159 DA204U
D160 DAN202U
D161 DA106U
Q211 DTC144EU INVERTER
Q210 DTA144EU INVERTER
Q199 2SA1576 CAP VS DISCHARGE
Q200 DTC144EU CAP VS DISCHARGE
Q201 2SD596
Q202 2SD596
CAP VS DISCHARGE
D158 DA204U
Q188 DTA144EU INVERTER
Q208 DTC144EU AMP
Q207 DTA144EU AMP
Q203 2SC4081 FREQUENCY LOCK
Q204 2SA1576 FREQUENCY LOCK
D156 DA204U
Q214 2SK94
FL151 16kHz BPF
FL152 46kHz BPF
RV152 47k ATF BALANCE


13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
IC166 (1/4) TC4066BF SPEED AC GAIN SW
IC165 TC4052BF ATF AC GAIN SW/ CAP BIAS SW
IC166 (1/4) TC4066BF AFT AC GAIN SW
IC163 (1/4) NJM3403AM CAPSTAN ERROR AMP
IC163 (1/4) NJM3403AM CAP BIAS BUFFER
IC166 (1/4) TC4066BF SERVO AC GAIN SW
IC166 (1/4) TC4066BF SERVO DC GAIN SW
IC167 NJM2904M DRUM ERROR AMP
Q210 DTA144EU INVERTER
D158 DA204U
Q199 2SA1576 CAP VS DISCHARGE
Q188 DTA144EU INVERTER
Q203 2SC4081 FREQUENCY LOCK
Q204 2SA1576 FREQUENCY LOCK
Q205 2SC4081 FREQUENCY LOCK
Q206 2SA1576 FREQUENCY LOCK
Q208 DTC144EU AMP
Q207 DTA144EU AMP
Q200 DTC144EU CAP VS DISCHARGE
Q201 2SD596 Q202 2SD596 CAP VS DISCHARGE
D157 DA204U
IC163 (1/4) NJM3403AM DRUM SPEED ERROR AMP
IC164 BA6303F ANALOG DRUM SERVO
Q182 2SA1385 MOTOR POWER REG
Q181 2SA1576 MOTOR POWER REG
Q180 2SC4081 MOTOR POWER REG
D155 HZ4ALL
W501 (WHT)
CN501
W502
W503 FLAT CABLE
DR-45 BOARD
no mark : REC/PB mode
( ) : REC mode
< > : PB mode
IC501 CX20114 DRUM MOTOR DRIVE
Q501 2SA812 PROTECT
Q505 2SB1114 PWM POWER DRIVE
Q504 2SC1623 PROTECT
Q506 2SB1114 PWM POWER DRIVE
D502 E10QS03
Q507 NJL7141E END SENSOR
IC502 CX20036 CAPSTAN MOTOR DRIVE
D503 E10QS03
Q503 2SA812 EMERGENCY DETECT
Q502 DTC144EK CAP ON INHIBIT
D501 E10QS03
CN504 (RED)
W505 FLEXIBLE (FP-20)
CN312 (WHT)
TP520
TP501
CHASSIS GND

Signal Path

	REC	REC/PB	PB
Drum speed servo		⇒	
Drum phase servo		⇒❯	
Drum servo (speed and phase)		⇒❯❯	
Capstan speed servo		⇒	

Capsta
Capsta
Ref. sig


20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
DR-45 BOARD
no mark : REC/PB mode
( ) : REC mode
< > : PB mode
IC501
CX20114
DRUM MOTOR DRIVE
IC502
CX20036
CAPSTAN MOTOR DRIVE
Q501
2SA812
PROTECT
Q505
2SB1114
PWM POWER DRIVE
Q504
2SC1623
PROTECT
Q506
2SB1114
PWM POWER DRIVE
D502
E10QS03
D503
E10QS03
D501 E10QS03
Q507
NJL7141E
END SENSOR
Q503
2SA812
EMERGENCY DETECT
Q502
DTC144EK
CAP ON INHIBIT
CN504 (RED)
DRUM MOTOR
M902
CAPSTAN MOTOR
CAPSTAN FG
W503
FLAT CABLE
W505
FLEXIBLE (FP-201)
CN312 (WHT)
GND
EJECT SW
CHASSIS GND
TP520
TP501
W501 (WHT)
M SP/LP
C ON MM
CN501
W502
TS-80 BOARD
no mark : REC/PB mode
( ) : REC mode
< > : PB mode
Q451
NJL7141E-S
TAPE TOP SENSER
Q453
2SK94
SWITCH
IC451
NJM3404AM
HOLD BUFFER/SLOW BIAS AMP
IC452
TC4066BF
SAMPLING/SWITCH
Q452
DTC144EK
INVERTER
CN506 (WHT)
CN507 (WHT)
CHECK PIN
CN508 (WHT)
TP451
RV451 DRUM BIAS
RV456 SWP
RV458 BATT DOWN
RV459 FRAME
RV453 LP
RV452 SP
RV454 SLOW LP
RV455 SLOW SP

Signal Path

	REC	REC/PB	PB
Drum speed servo		➡	
Drum phase servo		➡➡	
Drum servo (speed and phase)		➡➡➡	
Capstan speed servo		➡	

	REC	REC/PB	PB
Capstan phase servo	➡➡		⇨⇨
Capstan servo (speed and phase)		➡➡➡	
Ref. signal	➡	➡	⇨

SS-83 (SERVO, SYSTEM CONTROL), RJ-3 (WIRED REMOTE CONTROL JACK), FU-62 (FUS

— Ref. No. SS-83, RJ-3, FU-62 BOARDS: 5000 series —

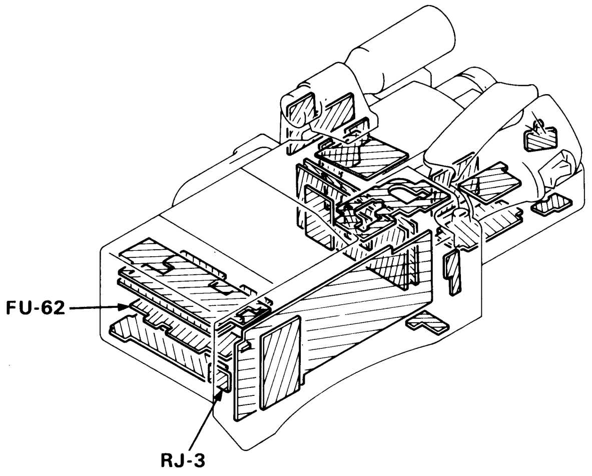
Note (Printed Wiring Board)

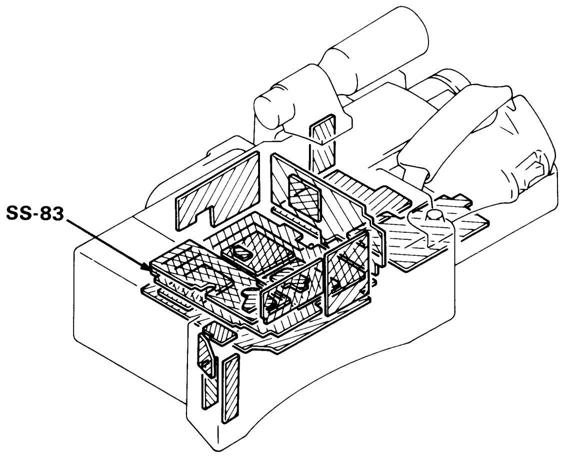
- ○— : indicates a lead wire mounted on the component side.
- ●— : indicates a lead wire mounted on the conductor side.
- ⊗ : Through hole.
- ▒ : Pattern from the side which enables seeing.
- : Pattern of the rear side.
- The ● number is the reference number in the waveform diagram.
- Digital transistor (SS-83: Q154, 158, 159, 162, 163, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 178, 188, 189, 190, 191, 194, 195, 196, 197, 198, 200, 207, 208, 209, 210, 211, 212, 213) transistor with resistors.
  Refer to the SS-83 board schematic diagrams for digital transistor.

Note

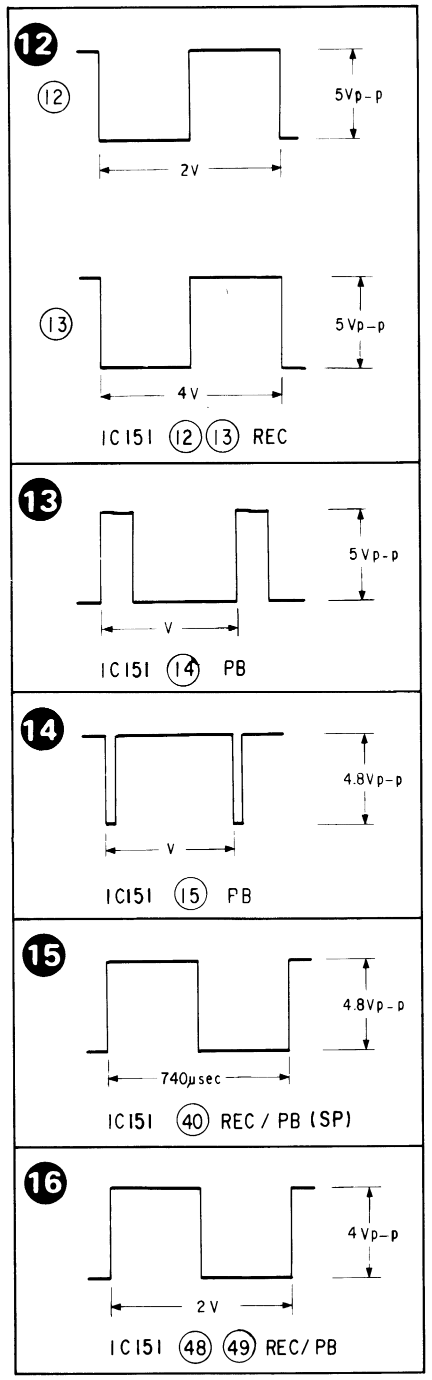
Conductor side:	Parts on the conductor side being seen from the conductor are stated.
Component side:	Parts on the component side being seen from the component are stated.

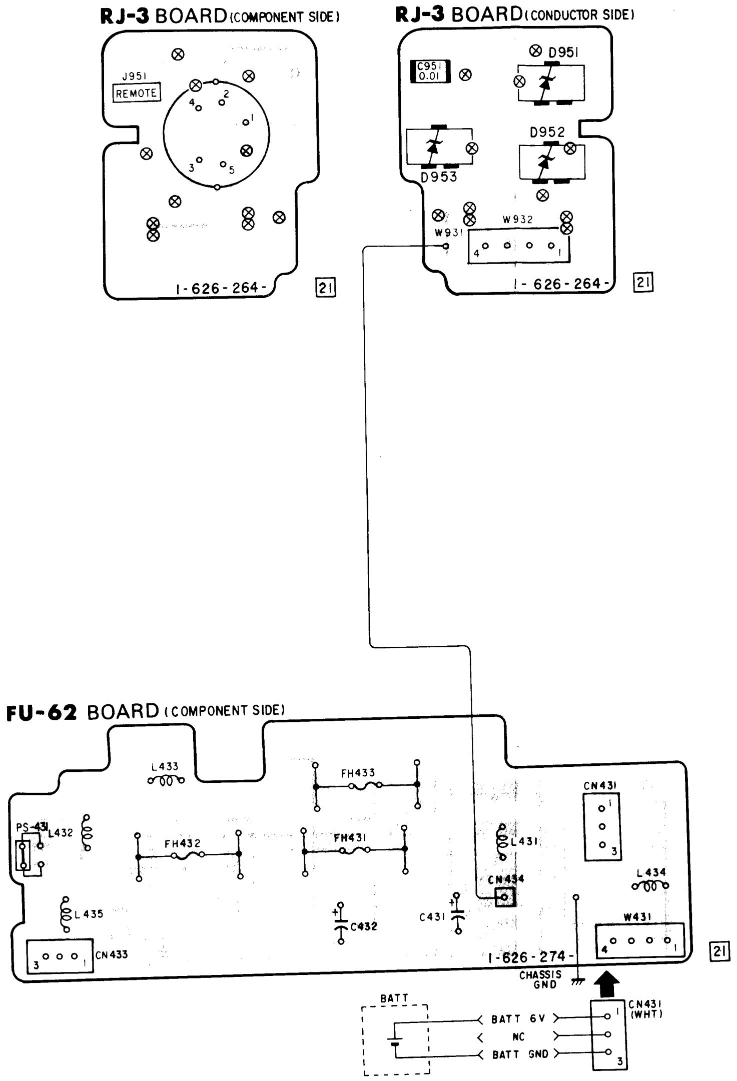
Regarding color indication of pattern
- * Pattern being seen in the state from the surface side are indicated in gray pattern.
- * Pattern being seen in the state of the rear surface side is indicated in green pattern.





SS-83 BOARD (SYSTEM CONTROL)


⓬
⑫
5Vp-p
2V
⑬
5Vp-p
4V
IC151 ⑫⑬ REC
⓭
5Vp-p
V
IC151 ⑭ PB
⓮
4.8Vp-p
V
IC151 ⑮ PB
⓯
4.8Vp-p
740μsec
IC151 ㊵ REC / PB (SP)
⓰
4Vp-p
2V
IC151 ㊽ ㊾ REC/ PB


RJ-3 BOARD (COMPONENT SIDE)
J951
REMOTE
1-626-264-
21
RJ-3 BOARD (CONDUCTOR SIDE)
C951 0.01
D951
D952
D953
W931
W932
1-626-264-
21
FU-62 BOARD (COMPONENT SIDE)
L433
FH433
PS-431
L432
FH432
FH431
L431
CN431
L434
CN434
L435
C432
C431
CN433
W431
1-626-274-
21
CHASSIS GND
BATT
BATT 6V
NC
BATT GND
CN431 (WHT)

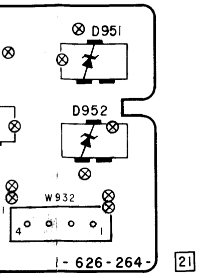
SS-83 BOARD

CN301	F-1
CN302	B-5
CN303	B-6
CN304	H-1
CN305	C-10
CN306	G-1
CN307	H-19
CN308	I-6
CN309	I-3
CN310	G-1
CN311	D-1
CN314	C-1
CN501	I-8
D151	B-5
D152	E-4
D153	H-7
D154	G-21
D155	H-4
D156	G-13
D157	D-12
D158	I-8
D159	G-10
D160	H-9
D161	I-8
D162	B-14
D163	E-4
IC151	G-2
IC152	C-3
IC153	H-6
IC154	E-4
IC155	D-2
IC156	C-6
IC157	E-2
IC158	E-2
IC159	C-12
IC160	F-5
IC161	F-8
IC162	C-8
IC163	G-9
IC164	D-10
IC165	D-8
IC166	E-8
IC167	E-14
Q151	D-7
Q152	D-6
Q153	C-6
Q154	C-6
Q155	D-6
Q156	D-6
Q157	D-5
Q158	E-1
Q159	E-21
Q160	D-2
Q161	B-2
Q162	E-1
Q163	E-1
Q166	E-3
Q167	E-3
Q168	H-7
Q169	G-7
Q170	G-7
Q171	I-3
Q172	G-5
Q173	G-5
Q174	G-5
Q175	G-5
Q176	G-5
Q177	G-6
Q178	G-6
Q179	G-6
Q180	H-5
Q181	H-5
Q182	I-5
Q183	G-6
Q184	C-14
Q185	B-13
Q186	C-14
Q187	B-14
Q188	H-10
Q189	F-10
Q190	E-8
Q191	E-7
Q192	E-7
Q193	D-8
Q194	E-8
Q195	D-8
Q196	D-8

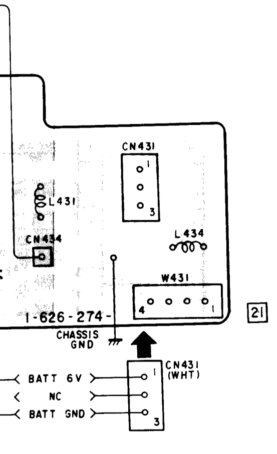
WIRED REMOTE CONTROL JACK), FU-62 (FUSE, BATTERY) PRINTED WIRING BOARD

—

BOARD (CONDUCTOR SIDE)



D951
D952
W932
1-626-264-
21

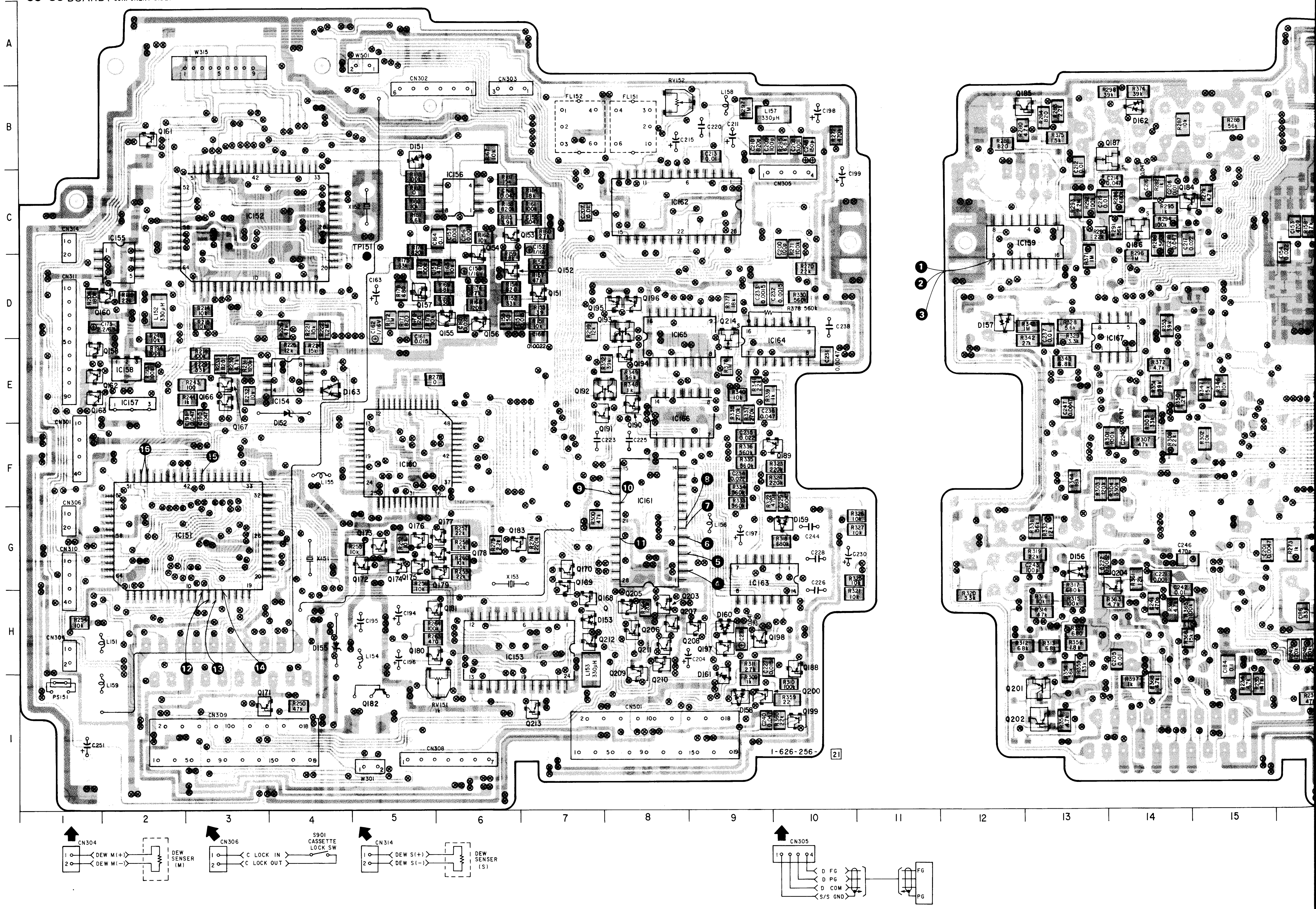


CN431
L431
CN434
L434
W431
1-626-274-
21
CHASSIS GND
CN431 (WHT)
BATT 6V
NC
BATT GND

SS-83 BOARD

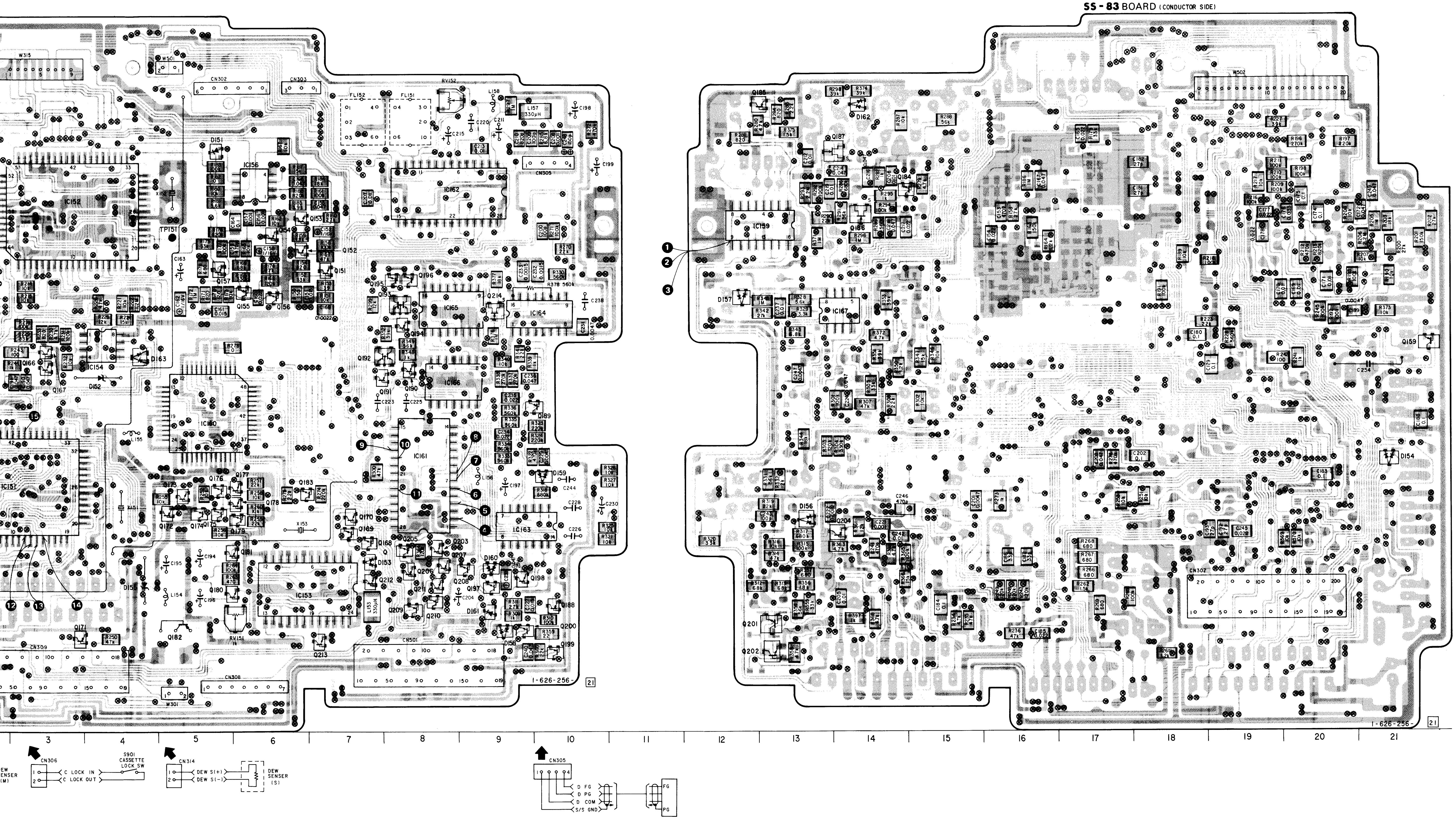
CN301	F-1
CN302	B-5
CN303	B-6
CN304	H-1
CN305	C-10
CN306	G-1
CN307	H-19
CN308	I-6
CN309	I-3
CN310	G-1
CN311	D-1
CN314	C-1
CN501	I-8
D151	B-5
D152	E-4
D153	H-7
D154	G-21
D155	H-4
D156	G-13
D157	D-12
D158	I-8
D159	G-10
D160	H-9
D161	I-8
D162	B-14
D163	E-4
IC151	G-2
IC152	C-3
IC153	H-6
IC154	E-4
IC155	D-2
IC156	C-6
IC157	E-2
IC158	E-2
IC159	C-12
IC160	F-5
IC161	F-8
IC162	C-8
IC163	G-9
IC164	D-10
IC165	D-8
IC166	E-8
IC167	E-14
Q151	D-7
Q152	D-6
Q153	C-6
Q154	C-6
Q155	D-6
Q156	D-6
Q157	D-5
Q158	E-1
Q159	E-21
Q160	D-2
Q161	B-2
Q162	E-1
Q163	E-1
Q166	E-3
Q167	E-3
Q168	H-7
Q169	G-7
Q170	G-7
Q171	I-3
Q172	G-5
Q173	G-5
Q174	G-5
Q175	G-5
Q176	G-5
Q177	G-6
Q178	G-6
Q179	G-6
Q180	H-5
Q181	H-5
Q182	I-5
Q183	G-6
Q184	C-14
Q185	B-13
Q186	C-14
Q187	B-14
Q188	H-10
Q189	F-10
Q190	E-8
Q191	E-7
Q192	E-7
Q193	D-8
Q194	E-8
Q195	D-8
Q196	D-8
Q197	H-9
Q198	H-9
Q199	I-10
Q200	I-8
Q201	I-13
Q202	I-13
Q203	H-8
Q204	H-14
Q205	H-8
Q206	H-8
Q207	H-8
Q208	H-9
Q209	I-8
Q210	H-8
Q211	H-8
Q212	H-7
Q213	I-7
Q214	D-9
RV151	I-5
RV152	B-8
TP151	D-5

SS-83 BOARD (COMPONENT SIDE)



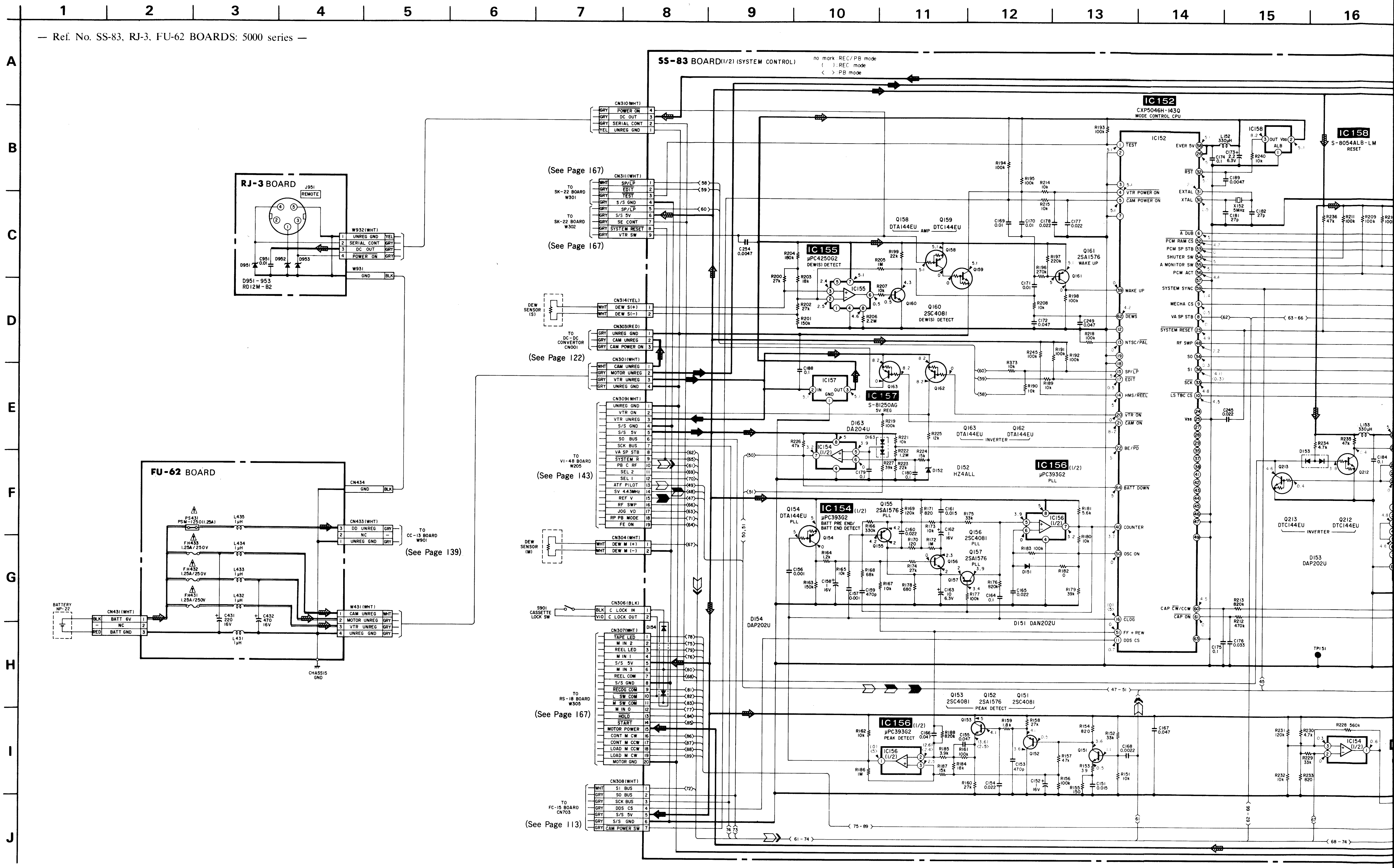
A
B
C
D
E
F
G
H
I
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
W315
W501
CN302
CN303
FL152
FL151
RV152
L158
L157 330μH
IC152
IC156
IC162
CN305
IC159
IC155
CN314
CN311
IC158
IC157
IC154
D152
D163
IC160
IC165
IC164
IC166
IC161
IC163
IC167
IC151
IC153
CN301
CN306
CN310
CN304
PS151
CN309
CN308
CN501
W301
X151
X152
X153
TP151
RV151
1-626-256-
21
CN304
DEW M(+)
DEW M(−)
DEW SENSER (M)
CN306
C LOCK IN
C LOCK OUT
S901 CASSETTE LOCK SW
CN314
DEW S(+)
DEW S(−)
DEW SENSER (S)
CN305
D FG
D PG
D COM
S/S GND
FG
PG

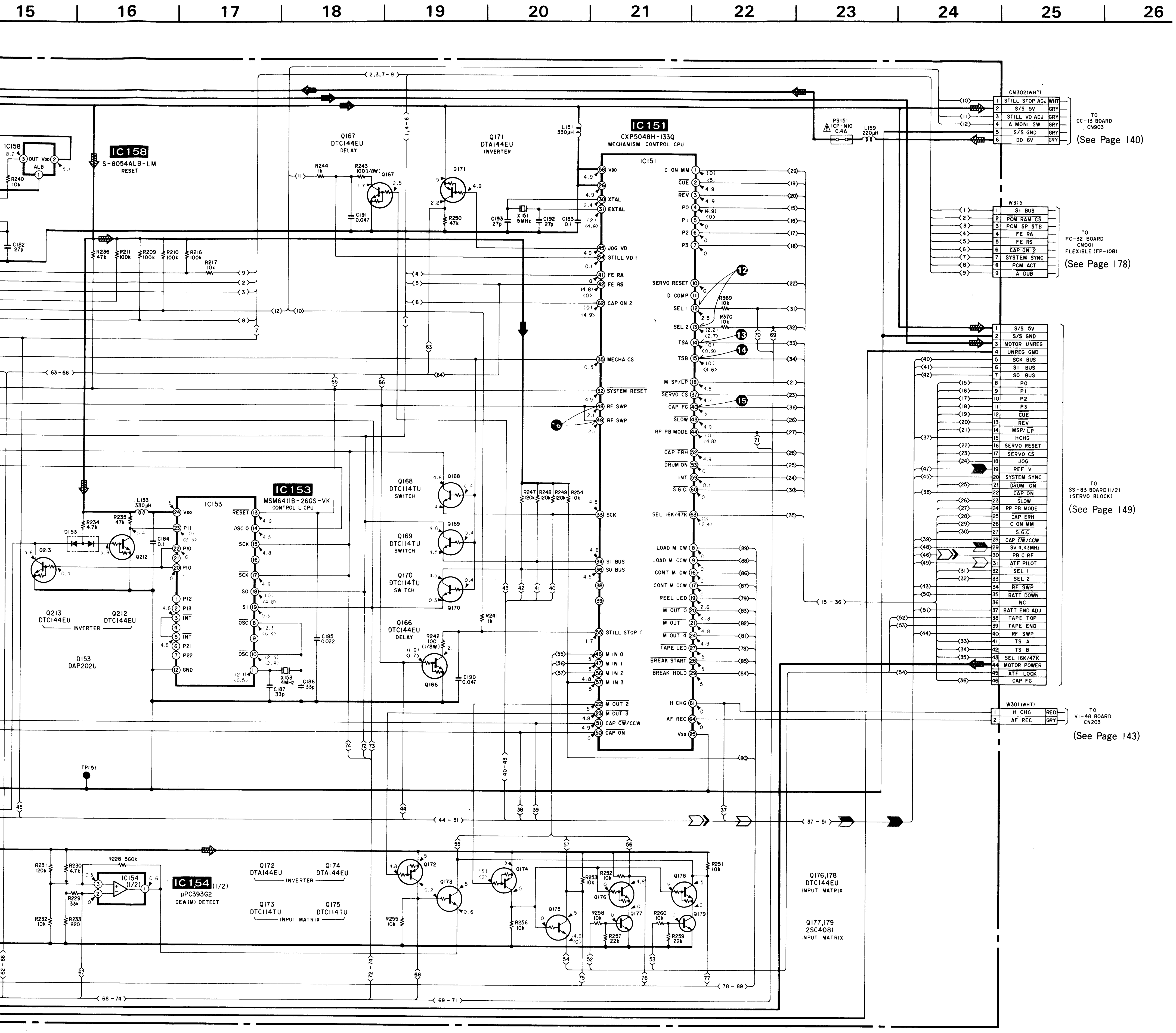
SS-83 BOARD (CONDUCTOR SIDE)


IC151
IC152
IC153
IC154
IC156
IC159
IC160
IC161
IC162
IC163
IC164
IC165
IC166
IC167
CN302
CN303
CN305
CN307
CN308
CN309
CN501
W301
W315
W501
W502
FL151
FL152
RV151
RV152
TP151
X151
X152
X153
L153 330μH
L157 330μH
1-626-256-21
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
CN306
1 C LOCK IN
2 C LOCK OUT
S901 CASSETTE LOCK SW
DEW SENSER (M)
CN314
1 DEW S(+)
2 DEW S(−)
DEW SENSER (S)
CN305
D FG
D PG
D COM
S/S GND
FG
PG

SS-83 (SYSTEM CONTROL), RJ-3 (WIRED REMOTE CONTROL JACK), FU-62 (FUSE, BATTERY) SCHEMATIC DIAGRAM

— Ref. No. SS-83, RJ-3, FU-62 BOARDS: 5000 series —


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
SS-83 BOARD(1/2) (SYSTEM CONTROL)
no mark :REC/PB mode
( ) :REC mode
< > :PB mode
RJ-3 BOARD
J951 REMOTE
D951-953 RD12M-B2
W932(WHT)
UNREG GND
SERIAL CONT
DC OUT
POWER ON
W931 GND
FU-62 BOARD
CN434 GND
PS431 PSM-125(1.25A)
FH433 1.25A/250V
FH432 1.25A/250V
FH431 1.25A/250V
L435 1μH
L434 1μH
L433 1μH
L432 1μH
L431 1μH
C431 220 16V
C432 470 16V
CN433(WHT)
DD UNREG
NC
UNREG GND
TO CC-13 BOARD W901
(See Page 139)
BATTERY NP-22
CN431(WHT)
BATT 6V
NC
BATT GND
W431(WHT)
CAM UNREG
MOTOR UNREG
VTR UNREG
UNREG GND
CHASSIS GND
CN310(WHT)
POWER ON
DC OUT
SERIAL CONT
UNREG GND
(See Page 167)
CN311(WHT)
TO SK-22 BOARD W301
TO SK-22 BOARD W302
SP/LP
EDIT
TEST
S/S GND
S/S 5V
SE CONT
SYSTEM RESET
VTR SW
DEW SENSOR (S)
CN314(YEL)
DEW S(+)
DEW S(−)
TO DC-DC CONVERTOR CN001
CN303(RED)
UNREG GND
CAM UNREG
CAM POWER ON
(See Page 122)
CN301(WHT)
CN309(WHT)
VTR ON
VTR UNREG
SO BUS
SCK BUS
VA SP STB
SYSTEM R
PB C RF
SEL 2
SEL 1
ATF PILOT
SV 4.43MHz
REF V
RF SWP
JOG VD
RP PB MODE
FE ON
TO VI-48 BOARD W205
(See Page 143)
DEW SENSOR (M)
CN304(WHT)
DEW M(+)
DEW M(−)
S901 CASSETTE LOCK SW
CN306(BLK)
C LOCK IN
C LOCK OUT
CN307(WHT)
TAPE LED
M IN 2
REEL LED
M IN 1
M IN 3
REEL COM
RECOG COM
L SW COM
M SW COM
M IN 0
HOLD
START
MOTOR POWER
CONT M CW
CONT M CCW
LOAD M CCW
LOAD M CW
MOTOR GND
TO RS-18 BOARD W305
(See Page 167)
CN308(WHT)
SI BUS
SO BUS
SCK BUS
DDS CS
TO FC-15 BOARD CN703
(See Page 113)
IC152 CXP5046H-143Q MODE CONTROL CPU
IC158 S-8054ALB-LM RESET
IC155 μPC4250G2 DEW(S) DETECT
Q158 DTA144EU AMP
Q159 DTC144EU
Q160 2SC4081 DEW(S) DETECT
Q161 2SA1576 WAKE UP
IC157 S-81250AG 5V REG
Q163 DTA144EU
Q162 DTA144EU
INVERTER
D163 DA204U
IC154(1/2)
D152 HZ4ALL
IC156(1/2) μPC393G2 PLL
IC154(1/2) μPC393G2 BATT PRE END/BATT END DETECT
Q154 DTA144EU PLL
Q155 2SA1576 PLL
Q156 2SC4081 PLL
Q157 2SA1576 PLL
D151 DAN202U
D154 DAP202U
Q153 2SC4081
Q152 2SA1576
Q151 2SC4081
PEAK DETECT
IC156(1/2) μPC393G2 PEAK DETECT
Q213 DTC144EU
Q212 DTC144EU
D153 DAP202U
TP151
TEST
EVER 5V
RST
EXTAL
XTAL
VTR POWER ON
CAM POWER ON
A DUB
PCM RAM CS
PCM SP STB
SHUTER SW
A MONITOR SW
PCM ACT
WAKE UP
SYSTEM SYNC
MECHA CS
VA SP STB
SYSTEM RESET
RF SWP
SO
SI
SCK
LS TBC CS
DEWS
NTSC/PAL
SP/LP
EDIT
HMS/REEL
VTR ON
CAM ON
BE/PD
BATT DOWN
COUNTER
OSC ON
CLOG
FF + REW
DDS CS
CAP CW/CCW
CAP ON
X152 5MHz
L152 330μH
L153 330μH


15
16
17
18
19
20
21
22
23
24
25
26
IC151
CXP5048H-133Q
MECHANISM CONTROL CPU
IC153
MSM6411B-26GS-VK
CONTROL L CPU
IC158
S-8054ALB-LM
RESET
IC154 (1/2)
μPC393G2
DEW(M) DETECT
Q167
DTC144EU
DELAY
Q171
DTA144EU
INVERTER
Q168 DTC114TU SWITCH
Q169 DTC114TU SWITCH
Q170 DTC114TU SWITCH
Q166 DTC144EU DELAY
Q213 DTC144EU
Q212 DTC144EU
INVERTER
D153 DAP202U
Q172 DTA144EU
Q174 DTA144EU
INVERTER
Q173 DTC114TU
Q175 DTC114TU
INPUT MATRIX
Q176,178 DTC144EU INPUT MATRIX
Q177,179 2SC4081 INPUT MATRIX
X151 5MHz
X153 4MHz
PS151 ICP-N10 0.4A
L159 220μH
L151 330μH
L153 330μH
TP151
CN302(WHT)
STILL STOP ADJ
S/S 5V
STILL VD ADJ
A MONI SW
S/S GND
DD 6V
TO CC-13 BOARD CN903
(See Page 140)
W315
SI BUS
PCM RAM CS
PCM SP STB
FE RA
FE RS
CAP ON 2
SYSTEM SYNC
PCM ACT
A DUB
TO PC-32 BOARD CN001 FLEXIBLE (FP-108)
(See Page 178)
S/S 5V
S/S GND
MOTOR UNREG
UNREG GND
SCK BUS
SI BUS
SO BUS
P0
P1
P2
P3
CUE
REV
MSP/LP
HCHG
SERVO RESET
SERVO CS
JOG
REF V
SYSTEM SYNC
DRUM ON
CAP ON
SLOW
RP PB MODE
CAP ERH
C ON MM
S.G.C.
CAP CW/CCW
SV 4.43MHz
PB C RF
ATF PILOT
SEL 1
SEL 2
RF SWP
BATT DOWN
NC
BATT END ADJ
TAPE TOP
TAPE END
RF SWP
TS A
TS B
SEL 16K/47K
MOTOR POWER
ATF LOCK
CAP FG
TO SS-83 BOARD (1/2) (SERVO BLOCK)
(See Page 149)
W301(WHT)
H CHG
AF REC
TO VI-48 BOARD CN203
(See Page 143)

Note (Schematic Diagram)

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, chip resistor are 1/10W unless otherwise noted.
  kΩ : 1000Ω, MΩ : 1000kΩ.
- All variable and semi-fixed resistors have characteristics curve B, unless otherwise noted.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.
- ▭ : panel disignation.
- ━ : B + line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- All voltage are dc measured with a VOM (10MΩ)
- ⇨ indicates the I/O direction of B lines (+, −).
- The ● number is the reference number in the waveform diagram.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Signal Path

	REC	REC/PB	PB
Capstan phase servo			▷▷
Ref. signal	▶	▶	▷

RS-18 (CONTROL/LOADING MOTOR, SOLENOID DRIVE), SK-22 (DISPLAY, FUNCTION CONTROL), LS-9 (LOADING SWITCH), LD-1 (TAPE TOP/END LED), MS-4 (MODE SWITCH, CONTR

— Ref. No. RS-18, LS-9, LD-1, MS-4 BOARDS: 6000 series, SK-22 BOARD: 7000 series —

Note (Printed Wiring Board)

- ○— : indicates a lead wire mounted on the component side.
- ●— : indicates a lead wire mounted on the conductor side.
- ⊗ : Through hole.
- ▨ : Pattern from the side which enables seeing.
- : Pattern of the rear side.
- Digital transistor (SK-22: Q301, 302, 303, RS-18: Q302, 303, 304, 307, 310, 312, 314) transistor with resistors.
  Refer to the SK-22, RS-18 boards schematic diagrams for digital transistor.

Note

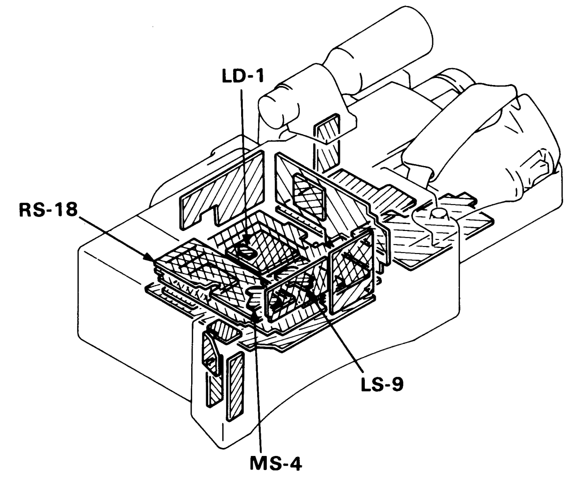
Conductor side: Parts on the conductor side being seen from the conductor are stated.

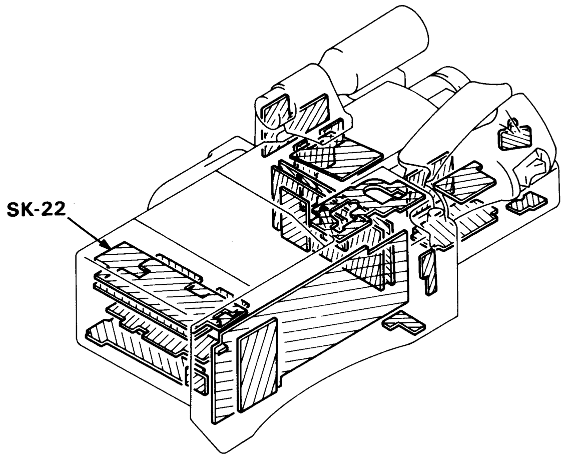
Component side: Parts on the component side being seen from the component are stated.

Regarding color indication of pattern

* Pattern being seen in the state from the surface side are indicated in gray pattern.

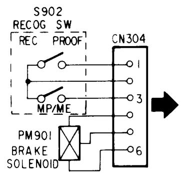
* Pattern being seen in the state of the rear surface side is indicated in green pattern.

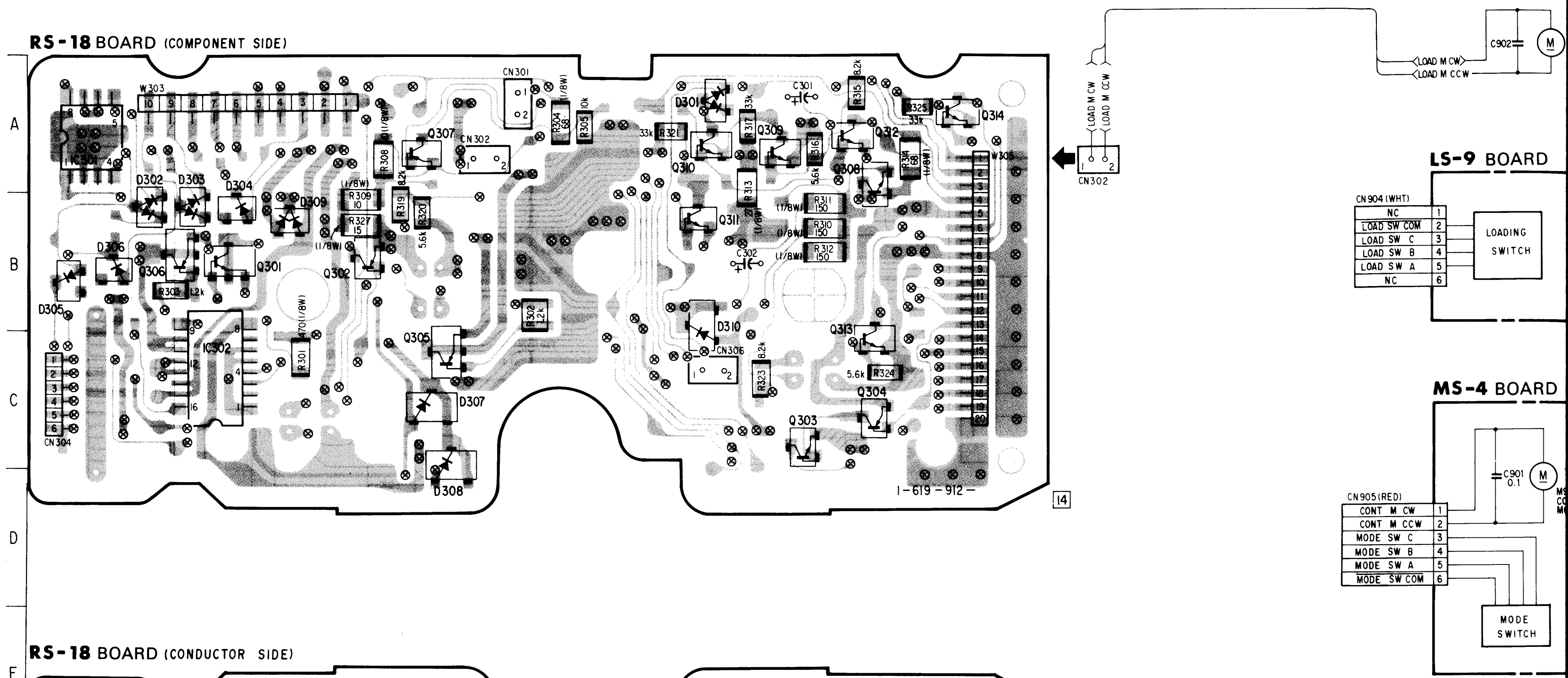

LD-1
RS-18
LS-9
MS-4

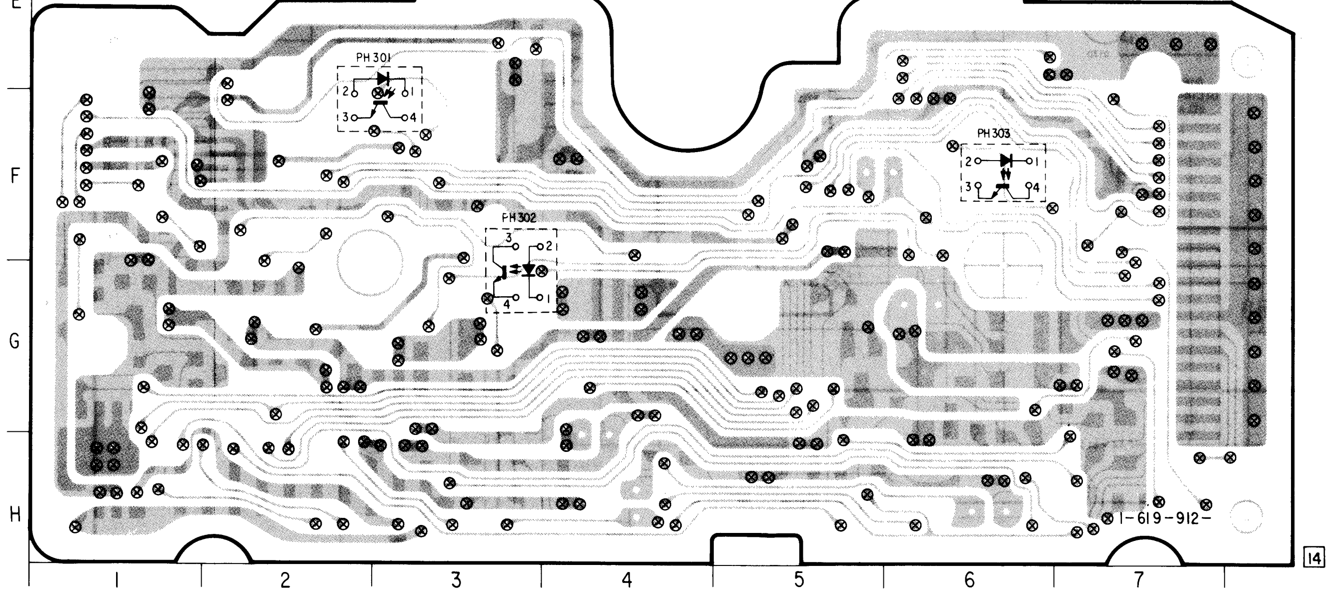


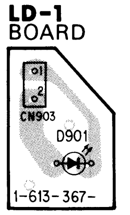
RS-18 BOARD

CN301	A-4
CN302	A-4
CN304	C-1
CN306	C-5
D301	A-5
D302	B-1
D303	B-2
D304	B-2
D305	B-1
D306	B-1
D307	C-3
D308	C-4
D309	B-2
D310	B-5
IC301	A-1
IC302	C-2
PH301	E-2
PH302	F-3
PH303	F-6
Q301	B-2
Q302	B-3
Q303	C-6
Q304	C-7
Q305	C-4
Q306	B-2
Q307	A-3
Q308	A-7
Q309	A-6
Q310	A-5
Q311	B-5
Q312	A-7
Q313	C-7
Q314	A-7

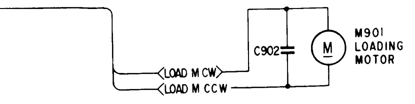

S902
RECOG SW
REC
PROOF
MP/ME
CN304
1
3
6
PM901
BRAKE
SOLENOID


RS-18 BOARD (COMPONENT SIDE)
A
B
C
D
W303
10 9 8 7 6 5 4 3 2 1
CN301
CN302
IC301
IC302
D301
D302
D303
D304
D305
D306
D307
D308
D309
D310
Q301
Q302
Q303
Q304
Q305
Q306
Q307
Q308
Q309
Q310
Q311
Q312
Q313
Q314
C301
C302
CN304
CN306
W305
R301
R302
R303
R305
R306
R308
R309
R310
R311
R312
R313
R315
R316
R317
R319
R320
R321
R323
R324
R325
R327
1-619-912-
14
LOAD M CW
LOAD M CCW
CN302
1
2
C902
M
LS-9 BOARD
CN904 (WHT)
NC
LOAD SW COM
LOAD SW C
LOAD SW B
LOAD SW A
NC
LOADING SWITCH
MS-4 BOARD
C901
0.1
CN905 (RED)
CONT M CW
CONT M CCW
MODE SW C
MODE SW B
MODE SW A
MODE SW COM
MODE SWITCH

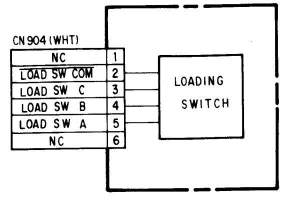

RS-18 BOARD (CONDUCTOR SIDE)
E
F
G
H
PH301
PH302
PH303
1-619-912-
14
1
2
3
4
5
6
7


LD-1 BOARD
CN903
D901
1-613-367-

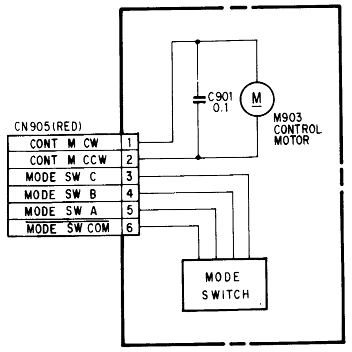
-4 (MODE SWITCH, CONTROL MOTOR) PRINTED WIRING BOARD


C902
M
M901
LOADING
MOTOR
LOAD M CW
LOAD M CCW

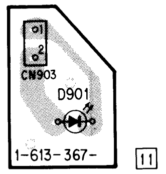
LS-9 BOARD


CN904 (WHT)
NC 1
LOAD SW COM 2
LOAD SW C 3
LOAD SW B 4
LOAD SW A 5
NC 6
LOADING
SWITCH

MS-4 BOARD


C901
0.1
M
M903
CONTROL
MOTOR
CN905 (RED)
CONT M CW 1
CONT M CCW 2
MODE SW C 3
MODE SW B 4
MODE SW A 5
MODE SW COM 6
MODE
SWITCH

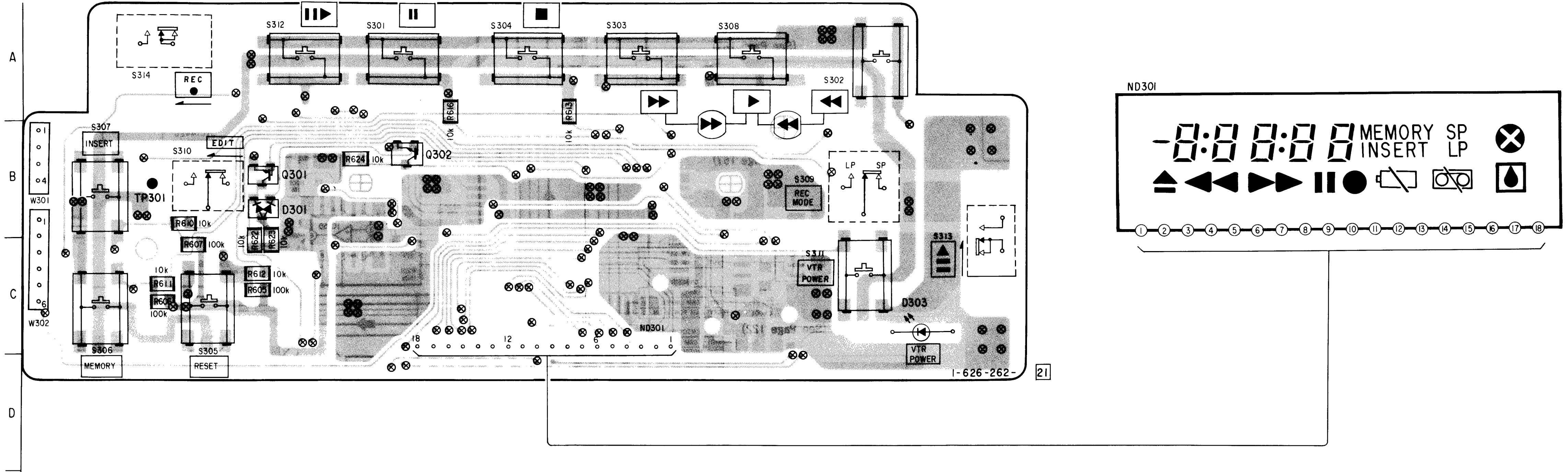
LD-1 BOARD


CN903
D901
1-613-367-
11

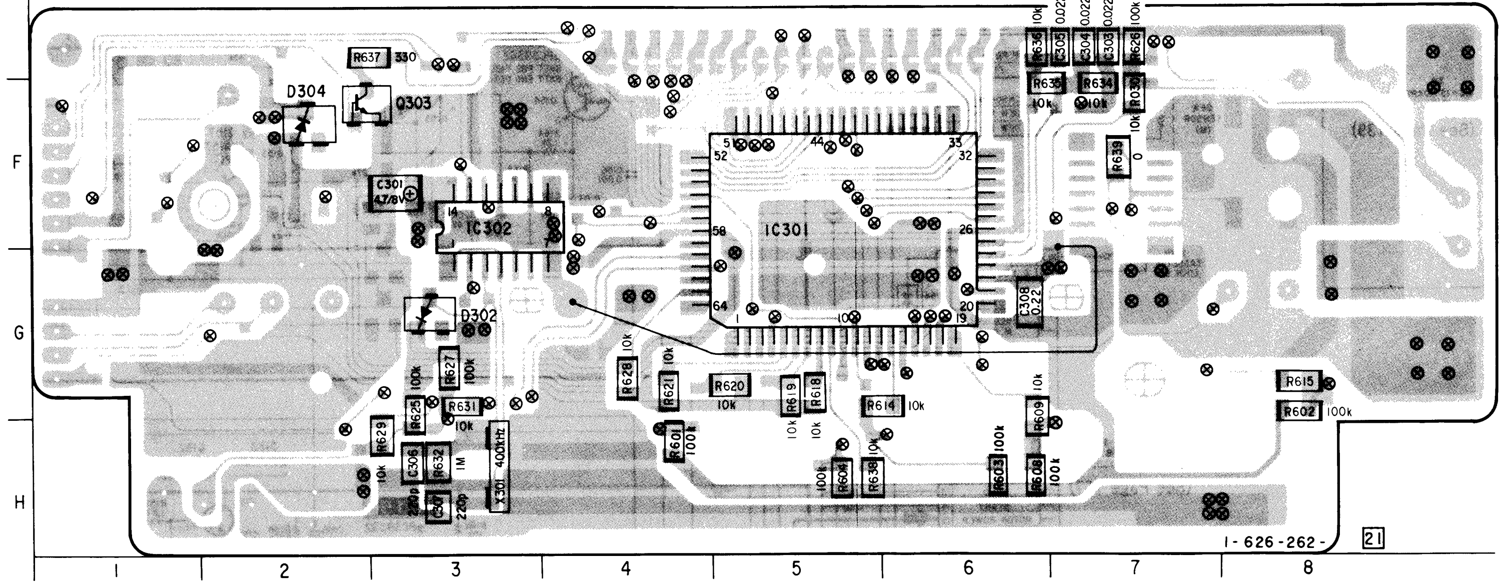
SK-22 BOARD

D301	B-3
D302	G-3
D303	C-8
D304	F-2
IC301	G-5
IC302	F-3
Q301	B-3
Q302	B-4
Q303	F-2
TP301	B-2
TP302	C-2

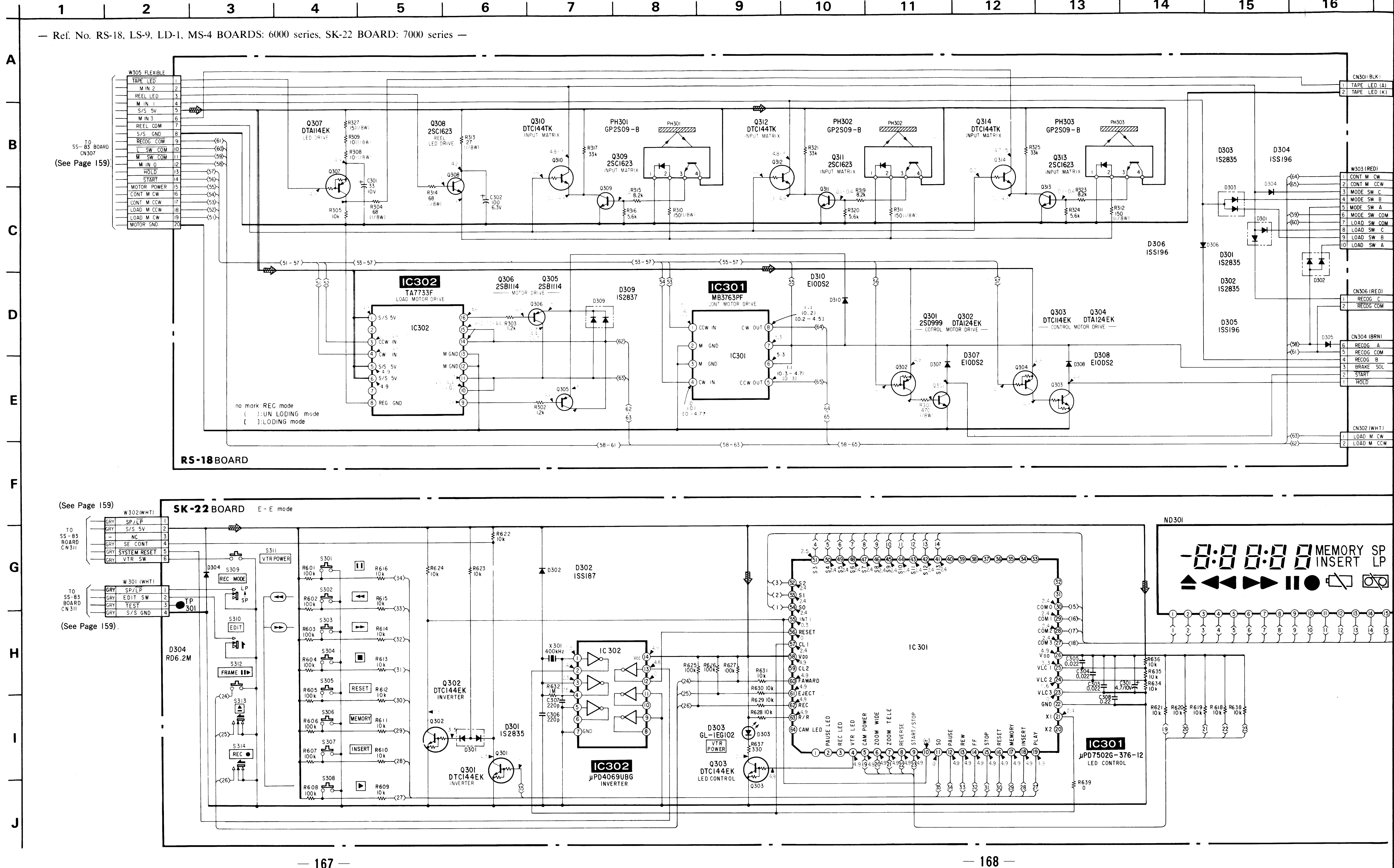
SK-22 BOARD (COMPONENT SIDE)


A
B
C
D
S312
S301
S304
S303
S308
S314
REC
S302
S307
INSERT
S310
EDIT
Q301
D301
TP301
R624
10k
Q302
R616
R613
10k
W301
W302
R610 10k
R607 100k
R622
R623
R611
R606
100k
R612 10k
R605 100k
S306
MEMORY
S305
RESET
S309
REC MODE
LP
SP
S311
VTR POWER
S313
D303
VTR POWER
ND301
18
12
1
1-626-262-
21
ND301
MEMORY SP
INSERT LP

SK-22 BOARD (CONDUCTOR SIDE)


E
F
G
H
R637 330
D304
Q303
C301
47/8V
IC302
14
IC301
51
44
33
52
32
58
26
64
20
19
D302
R636
C306
C304
C303
R626
10k
0.022
0.022
0.022
100k
R635
R634
R632
10k
R639
C309
0.22
R628
R621
R620 10k
R619
R618
R614 10k
R615
R602 100k
R629
R625
R627
R631
10k
R632
1M
X301
400kHz
R601
100k
R604
R630
R603
R609
R608
1-626-262-
21
1
2
3
4
5
6
7
8

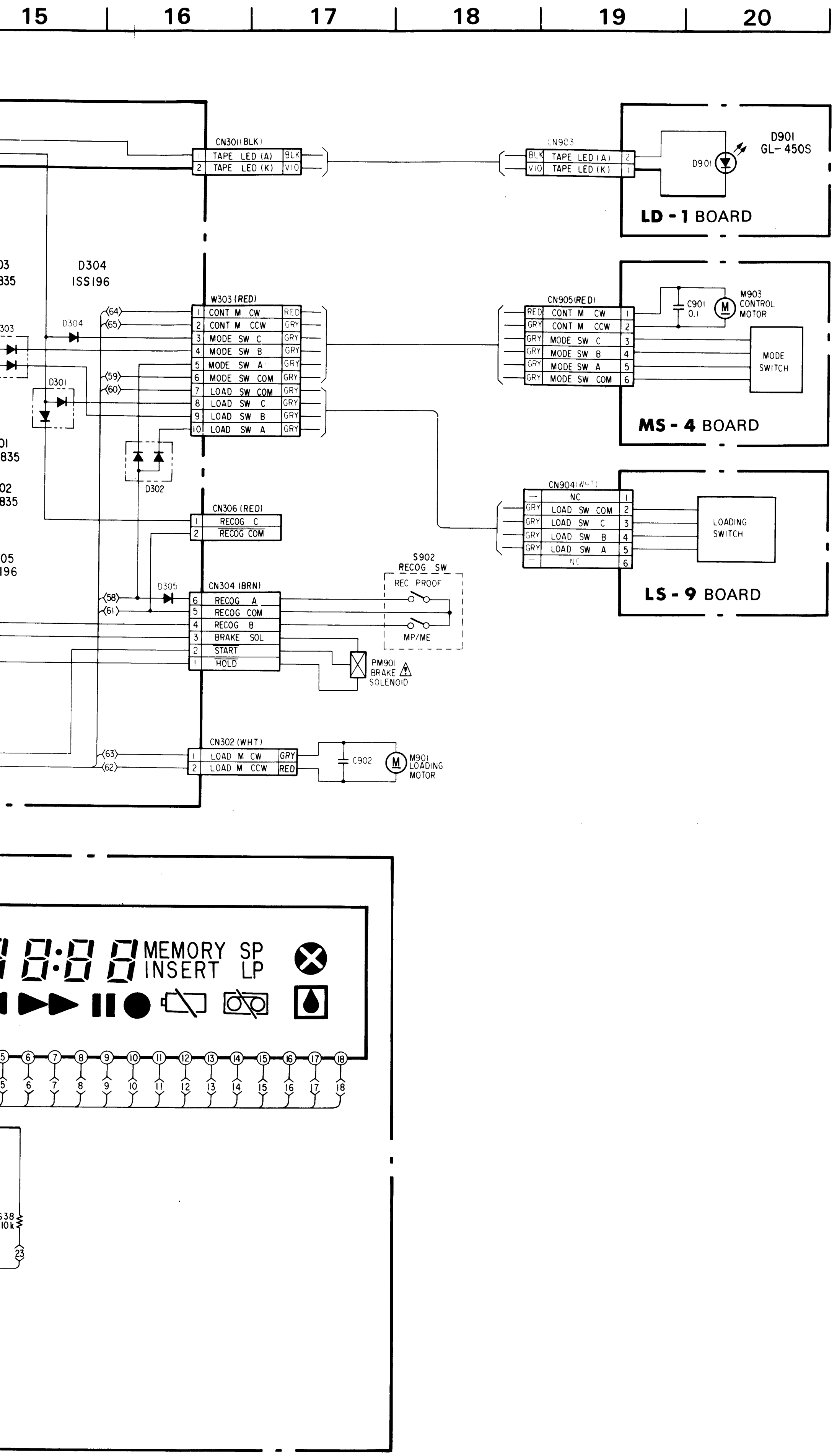
RS-18 (CONTROL/LOADING MOTOR, SOLENOID DRIVE), SK-22 (DISPLAY, FUNCTION CONTROL), LS-9 (LOADING SWITCH), LD-1 (TAPE TOP/END LED), MS-4 (MODE SWITCH, CONTROL MOTOR) SCHEMATIC DIAGRAM



— Ref. No. RS-18, LS-9, LD-1, MS-4 BOARDS: 6000 series, SK-22 BOARD: 7000 series —

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
W305 FLEXIBLE
TAPE LED
M IN 2
REEL LED
M IN 1
S/S 5V
M IN 3
REEL COM
S/S GND
RECOG COM
L SW COM
M SW COM
M IN 0
HOLD
START
MOTOR POWER
CONT M CW
CONT M CCW
LOAD M CCW
LOAD M CW
MOTOR GND
TO SS-83 BOARD CN307
(See Page 159)
Q307 DTA114EK LED DRIVE
Q308 2SC1623 REEL LED DRIVE
Q310 DTC144TK INPUT MATRIX
PH301 GP2S09-B
Q309 2SC1623 INPUT MATRIX
Q312 DTC144TK INPUT MATRIX
PH302 GP2S09-B
Q311 2SC1623 INPUT MATRIX
Q314 DTC144TK INPUT MATRIX
PH303 GP2S09-B
Q313 2SC1623 INPUT MATRIX
D303 1S2835
D304 1SS196
D306 1SS196
D301 1S2835
D302 1S2835
D305 1SS196
CN301 (BLK)
TAPE LED (A)
TAPE LED (K)
W303 (RED)
CONT M CW
CONT M CCW
MODE SW C
MODE SW B
MODE SW A
MODE SW COM
LOAD SW COM
LOAD SW C
LOAD SW B
LOAD SW A
CN306 (RED)
RECOG C
RECOG COM
CN304 (BRN)
RECOG A
RECOG COM
RECOG B
BRAKE SOL
START
HOLD
CN302 (WHT)
LOAD M CW
LOAD M CCW
IC302 TA7733F LOAD MOTOR DRIVE
Q306 2SB1114
Q305 2SB1114
MOTOR DRIVE
D309 1S2837
IC301 MB3763PF CONT MOTOR DRIVE
D310 E10DS2
Q301 2SD999 COTROL MOTOR DRIVE
Q302 DTA124EK
Q303 DTC114EK
Q304 DTA124EK CONTROL MOTOR DRIVE
D307 E10DS2
D308 E10DS2
no mark: REC mode
( ): UN LODING mode
[ ]: LODING mode
RS-18 BOARD
(See Page 159)
W302 (WHT)
SP/LP
S/S 5V
NC
SE CONT
SYSTEM RESET
VTR SW
TO SS-83 BOARD CN311
W301 (WHT)
SP/LP
EDIT SW
TEST
S/S GND
TP 301
SK-22 BOARD E-E mode
D304 RD6.2M
S309 REC MODE
S310 EDIT
S311 VTR POWER
S312 FRAME
S313
S314 REC
S301
S302
S303
S304
S305 RESET
S306 MEMORY
S307 INSERT
S308
Q302 DTC144EK INVERTER
Q301 DTC144EK INVERTER
D301 1S2835
D302 1SS187
X301 400kHz
IC302 μPD4069UBG INVERTER
D303 GL-1EG102
VTR POWER
Q303 DTC144EK LED CONTROL
IC301
IC301 μPD7502G-376-12 LED CONTROL
PAUSE LED
REC LED
VTR LED
CAM POWER
ZOOM WIDE
ZOOM TELE
REVERSE
START/STOP
PAUSE
REW
FF
STOP
RESET
MEMORY
INSERT
PLAY
ND301
MEMORY SP
INSERT LP

DIAGRAM


15
16
17
18
19
20
CN301(BLK)
TAPE LED (A)
TAPE LED (K)
BLK
VIO
CN903
D901
D901
GL-450S
LD-1 BOARD
D304
ISS196
W303(RED)
CONT M CW
CONT M CCW
MODE SW C
MODE SW B
MODE SW A
MODE SW COM
LOAD SW COM
LOAD SW C
LOAD SW B
LOAD SW A
RED
GRY
D301
D302
CN905(RED)
C901
0.1
M903
CONTROL
MOTOR
MODE
SWITCH
MS-4 BOARD
CN904(WHT)
NC
LOADING
SWITCH
LS-9 BOARD
CN306(RED)
RECOG C
RECOG COM
S902
RECOG SW
REC PROOF
MP/ME
D305
CN304(BRN)
RECOG A
RECOG COM
RECOG B
BRAKE SOL
START
HOLD
PM901
BRAKE
SOLENOID
CN302(WHT)
LOAD M CW
LOAD M CCW
C902
M901
LOADING
MOTOR
MEMORY
INSERT
SP
LP

Note (Schematic Diagram)

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors are in μF unless otherwise noted. pF: μμF
  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, chip resistor are 1/10W unless otherwise noted.
  kΩ : 1000Ω, MΩ : 1000kΩ.
- All variable and semi-fixed resistors have characteristics curve B, unless otherwise noted.
- : nonflammable resistor.
- : fusible resistor.
- ▭ : panel disignation.
- ━ : B + line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- All voltage are dc measured with a VOM (10MΩ)
- ➩ indicates the I/O direction of B lines (+, −).

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

PC-32 (PCM AUDIO), DL-22 (AUDIO DUBBING SWITCH), HJ-4 (HEAD PHONES/MIC JACK), ME-5 (LEVEL METER), PV-3 (HEAD

— Ref. No. PC-32 BOARDS: 6000 series, HJ-4 BOARD: 6400 series, ME-5 BOARD: 6600 series, DL-22, VR-17 BOARDS: 7000 series, PV-3 BOARD: 8

Note (Printed Wiring Board)

- ○— : indicates a lead wire mounted on the component side.
- ●— : indicates a lead wire mounted on the conductor side.
- ⊗ : Through hole.
- ▒ : Pattern from the side which enables seeing.

* Pattern from the rear side

- The ● number is the reference number in the waveform diagram.
- Digital transistor (PC-32: Q003, 004, 005, 006, 007, 010, 011, 017, 018, 020, 023, 024, 028) transistor with resistors. Refer to the PC-32 board schematic diagrams for digital transistor.

Note

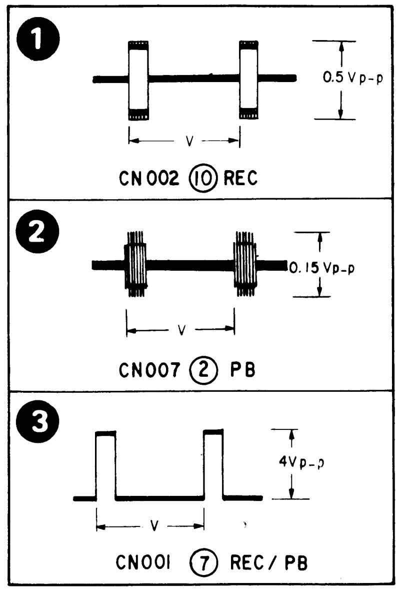
Conductor side:	Parts on the conductor side being seen from the conductor are stated.
Component side:	Parts on the component side being seen from the component are stated.

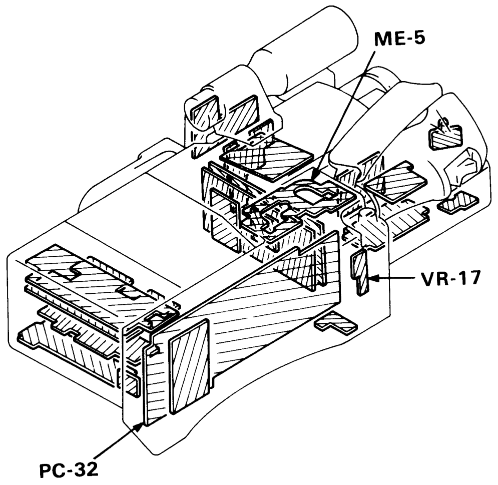
Regarding color indication of pattern

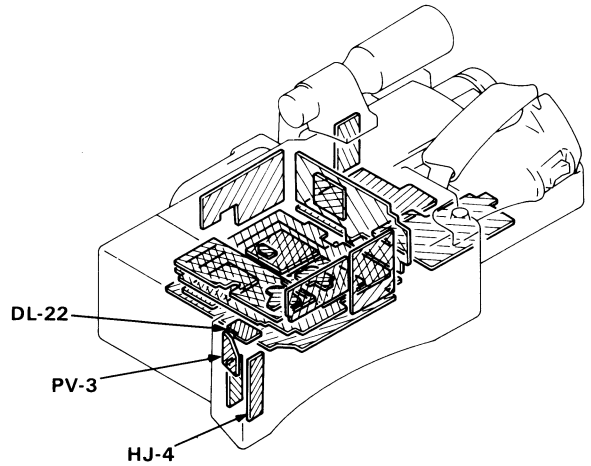
* Pattern being seen in the state from the surface side are indicated in gray pattern.

* Pattern being seen in the state of the rear surface side is indicated in green pattern.

PC-32 BOARD

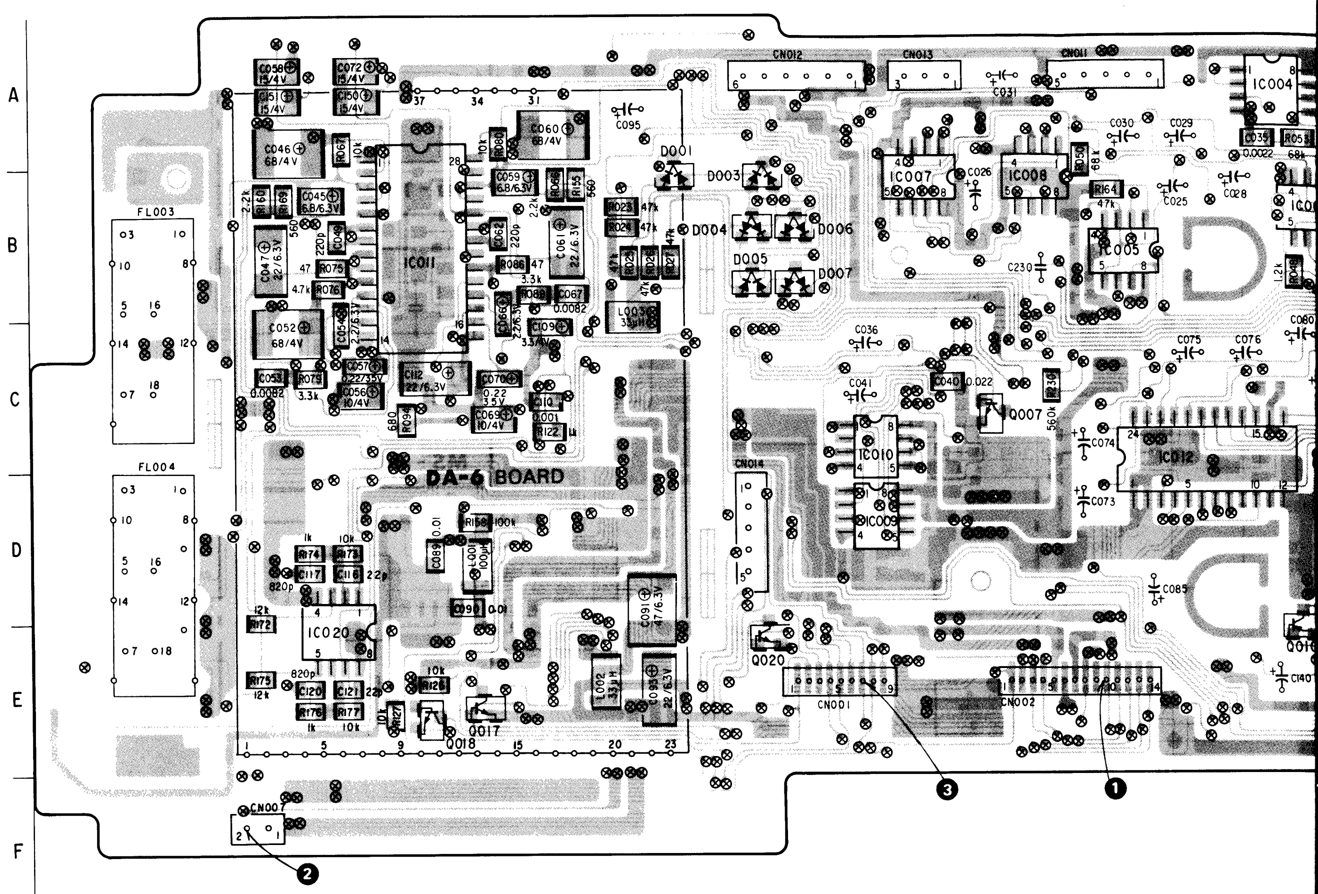



ME-5
VR-17
PC-32

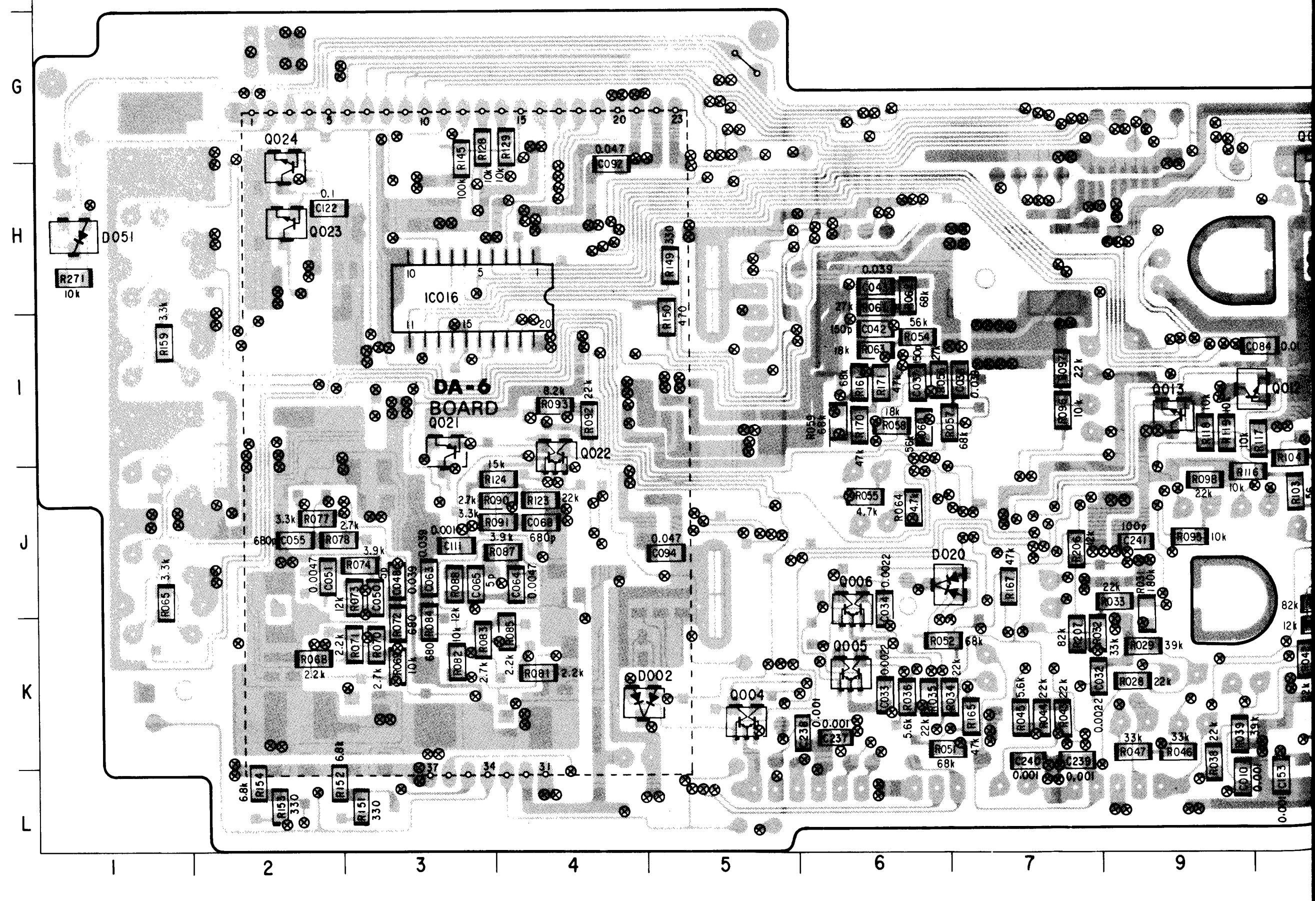

DL-22
PV-3
HJ-4

PC-32 BOARD	
CN001	E-6
CN002	E-7
CN003	B-16
CN004	E-10
CN005	E-11
CN006	E-12
CN007	F-2
CN008	A-13
CN011	A-9
CN012	A-6
CN013	A-6
CN014	D-5
CN030	E-16
CN031	E-13
D001	B-5
D002	K-4
D003	B-5
D004	B-5
D005	B-5
D006	B-6
D007	B-6
D008	H-10
D009	D-10
D012	K-10
D013	I-13
D014	I-13
D015	I-13
D020	J-6
D050	I-16
D121	K-10
IC002	B-12
IC004	A-10
IC005	B-9
IC006	B-10
IC007	B-6
IC008	B-7
IC009	D-6
IC010	C-6
IC011	B-3
IC012	C-9
IC014	C-12
IC015	C-12
IC016	H-3
IC020	E-2
IC021	B-13
Q003	J-12
Q004	K-5
Q005	K-6
Q006	J-6
Q007	C-7
Q009	E-10
Q010	E-10
Q011	H-10
Q012	I-10
Q013	I-9
Q014	D-11
Q015	I-11
Q016	D-11
Q016	D-11
Q017	E-3
Q018	E-3
Q019	H-11
Q020	E-5
Q021	I-3
Q022	I-4
Q023	H-2
Q024	H-2
Q025	C-14
Q026	C-15
Q027	H-14
Q028	D-13
Q029	D-14
Q030	A-11
Q031	B-11
RV002	C-11
RV003	C-12
TP001	C-11

PC-32 BOARD (COMPONENT SIDE)

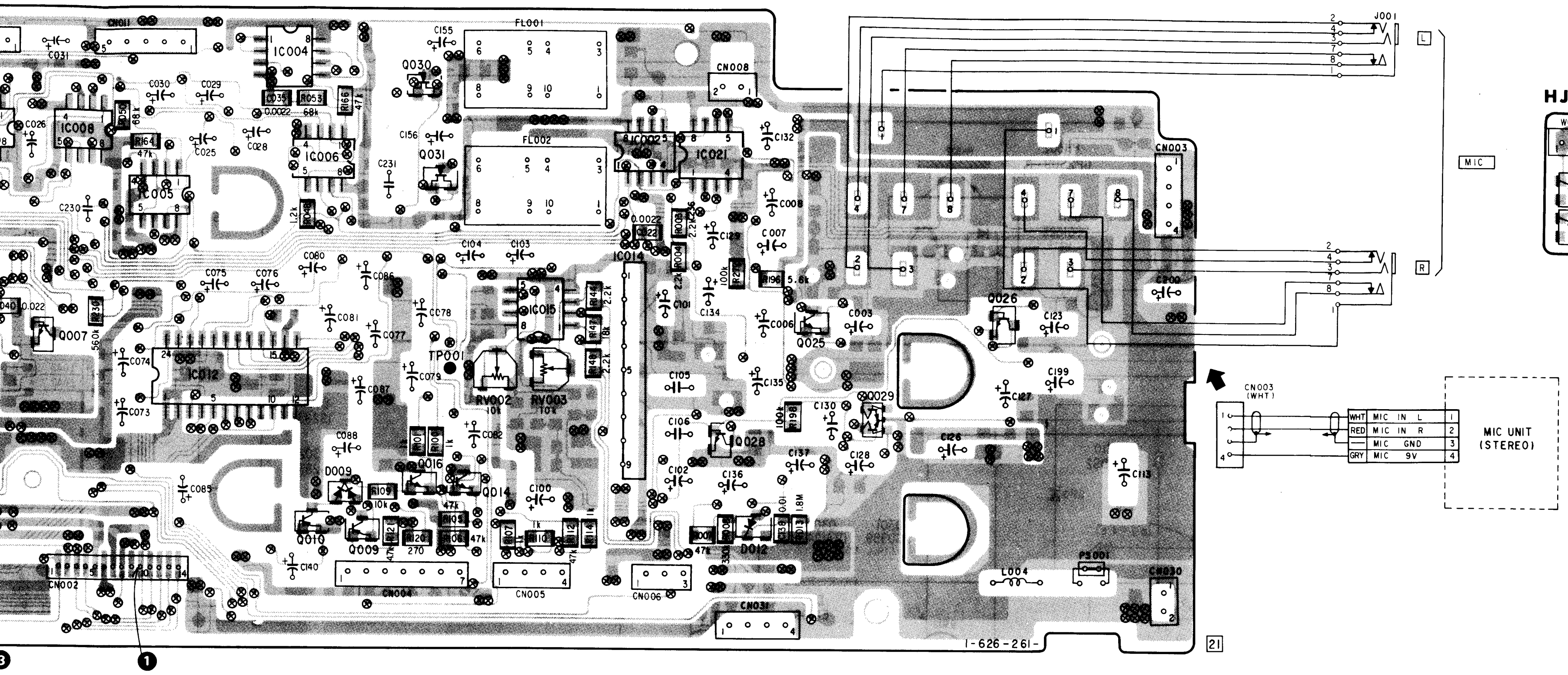

A
B
C
D
E
F
FL003
FL004
CN012
CN013
CN011
IC004
IC007
IC008
IC005
IC011
IC010
IC009
IC012
IC020
DA-6 BOARD
D001
D003
D004
D005
D006
D007
Q007
Q017
Q018
Q020
CN014
CN001
CN002
CN007
❶
❷
❸

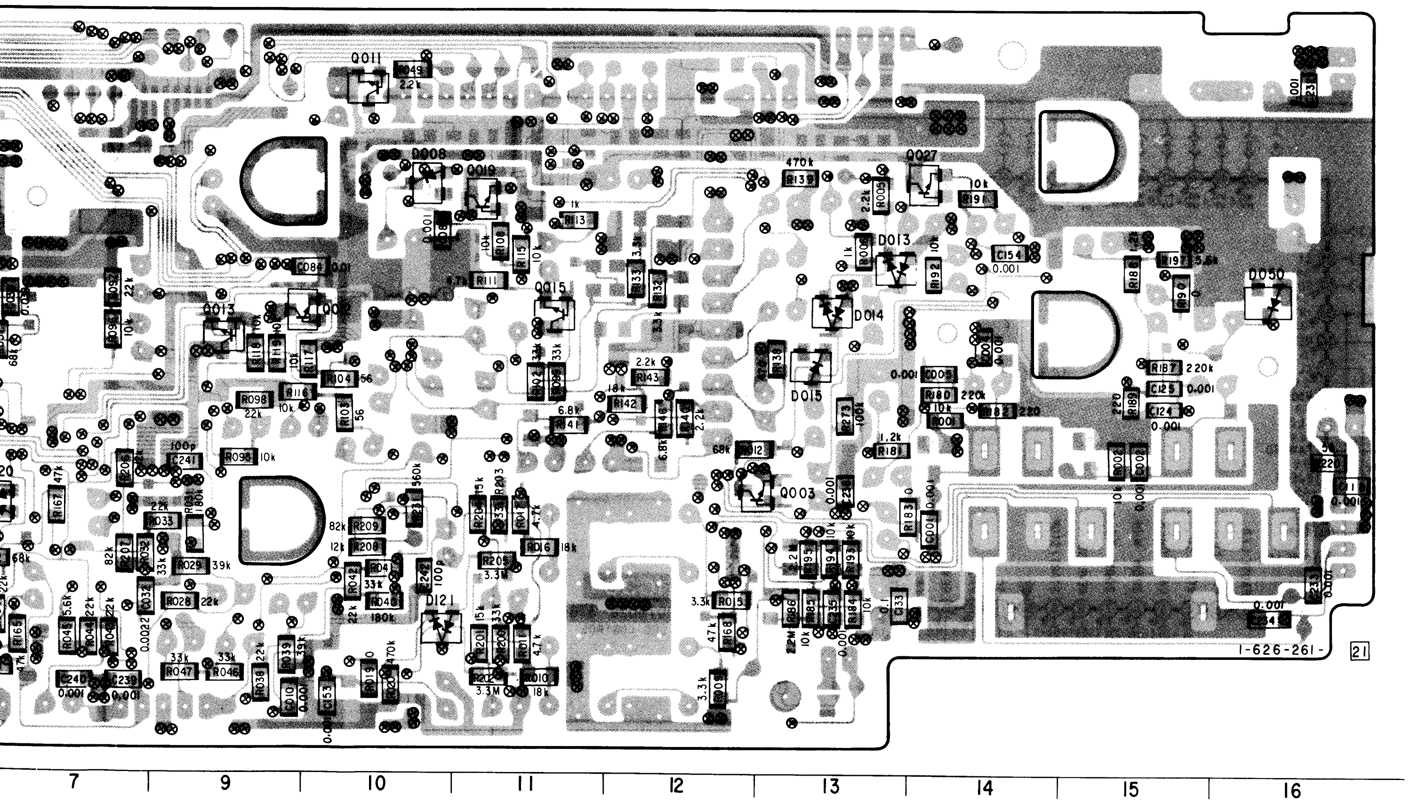
PC-32 BOARD (CONDUCTOR SIDE)


G
H
I
J
K
L
IC016
DA-6 BOARD
Q021
Q022
Q023
Q024
Q004
Q005
Q006
Q013
Q020
D002
D051
1
2
3
4
5
6
7
9

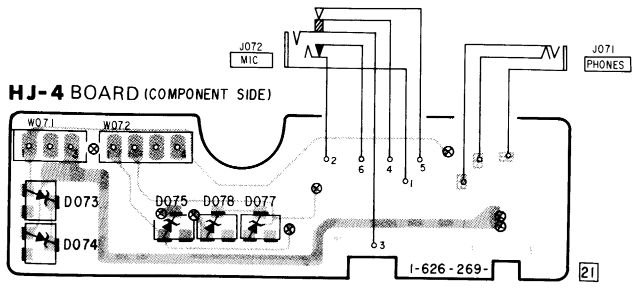
(LEVEL METER), PV-3 (HEAD PHONE LEVEL CONTROL), VR-17 (AUDIO REC LEVEL CONTROL) PRINTED WIRING BOARD

ARDS: 7000 series, PV-3 BOARD: 8000 series —

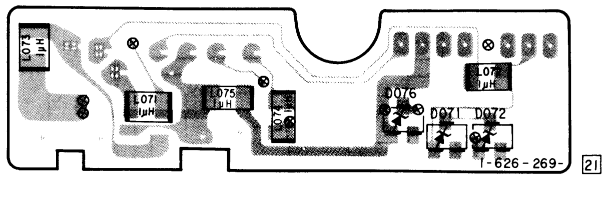

J001
L
R
MIC
CN003 (WHT)
WHT MIC IN L 1
RED MIC IN R 2
MIC GND 3
GRY MIC 9V 4
MIC UNIT (STEREO)
FL001
FL002
IC004
IC005
IC006
IC008
IC012
IC014
IC015
IC021
IC025
CN002
CN003
CN004
CN005
CN006
CN008
CN030
CN031
TP001
RV002
RV003
PS001
L004
1-626-261-
21


Q003
Q011
Q027
D013
D014
D015
D050
D121
1-626-261-
21
7
9
10
11
12
13
14
15
16

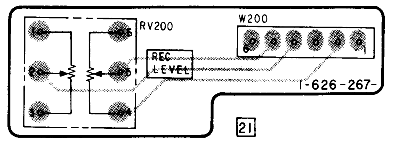
HJ-4 BOARD (COMPONENT SIDE)


J072
MIC
J071
PHONES
W071
W072
D073
D074
D075
D078
D077
1-626-269-
21

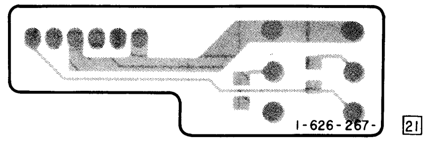
HJ-4 BOARD (CONDUCTOR SIDE)


L073
L071
L075
L074
D076
D071
D072
1-626-269-
21

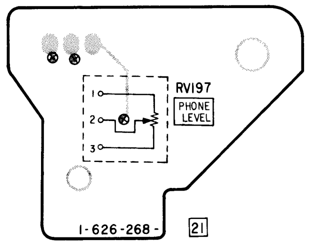
VR-17 BOARD (COMPONENT SIDE)


RV200
W200
REC LEVEL
1-626-267-
21

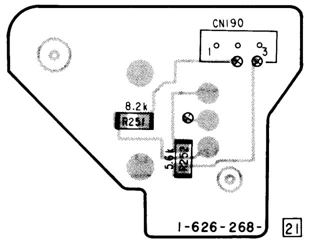
VR-17 BOARD (CONDUCTOR SIDE)



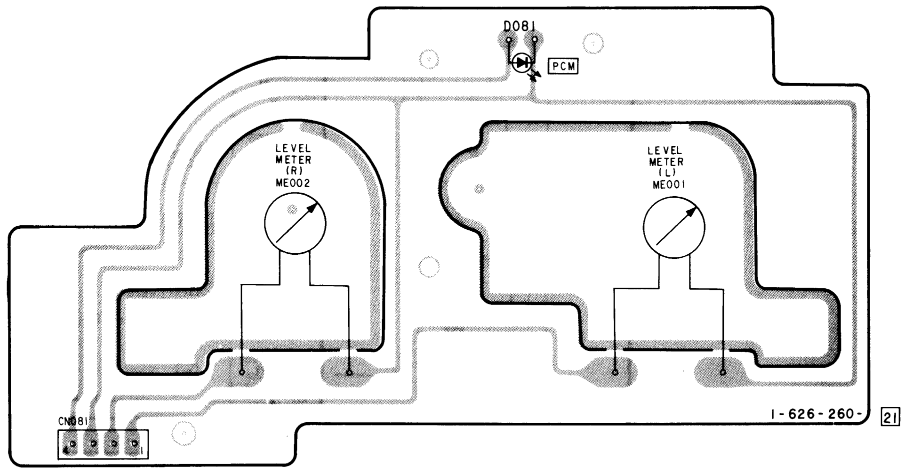
PV-3 BOARD (COMPONENT SIDE)


RV197
PHONE LEVEL
1-626-268-
21

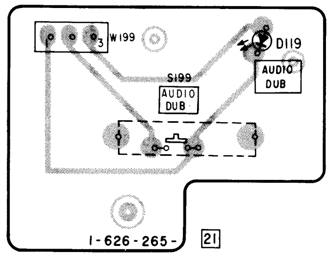
PV-3 BOARD (CONDUCTOR SIDE)


CN190
8.2k
R251
R252
1-626-268-
21

ME-5 BOARD (COMPONENT SIDE)

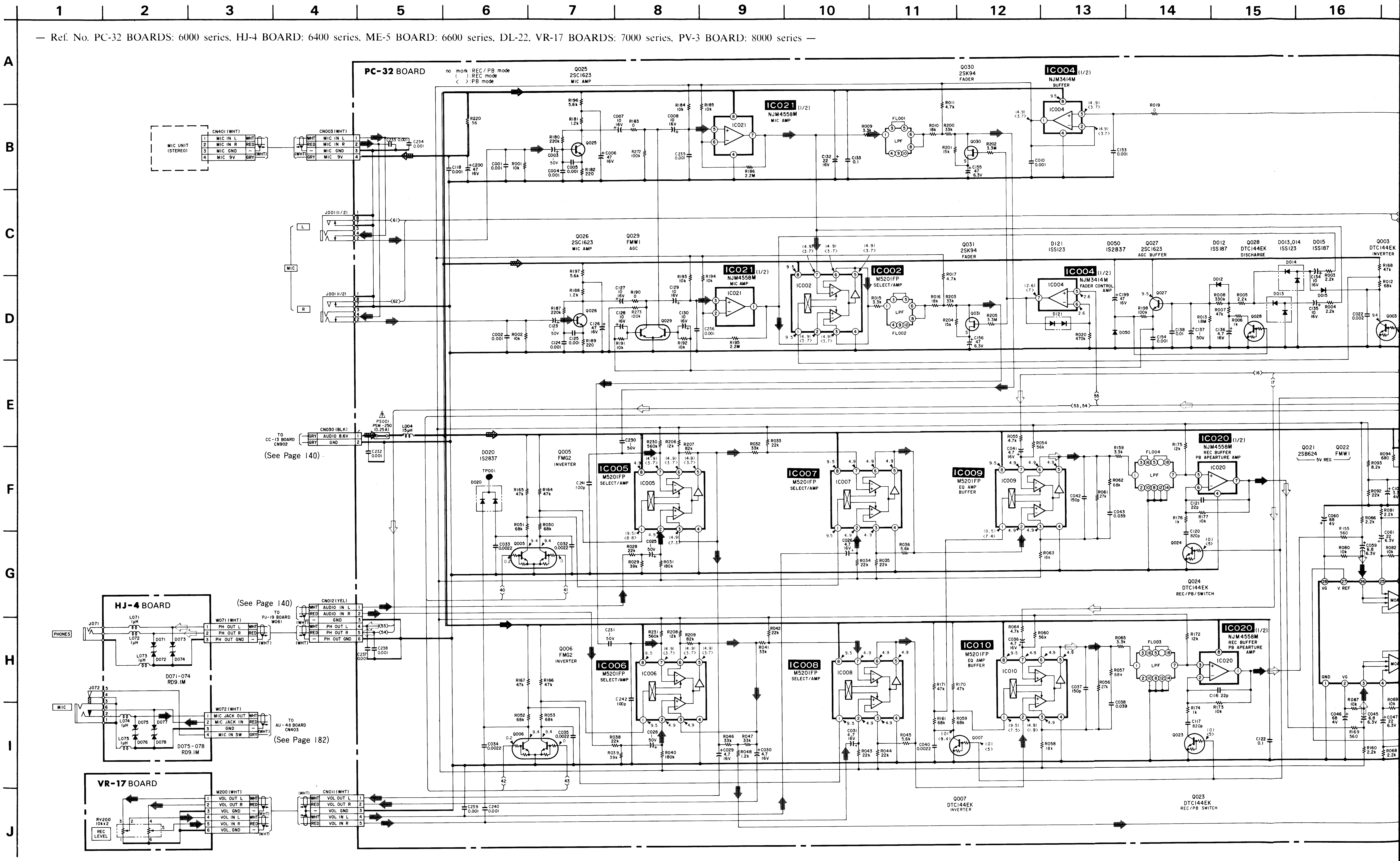

D081
PCM
LEVEL METER (R) ME002
LEVEL METER (L) ME001
CN081
1-626-260-
21

DL-22 BOARD (CONDUCTOR SIDE)

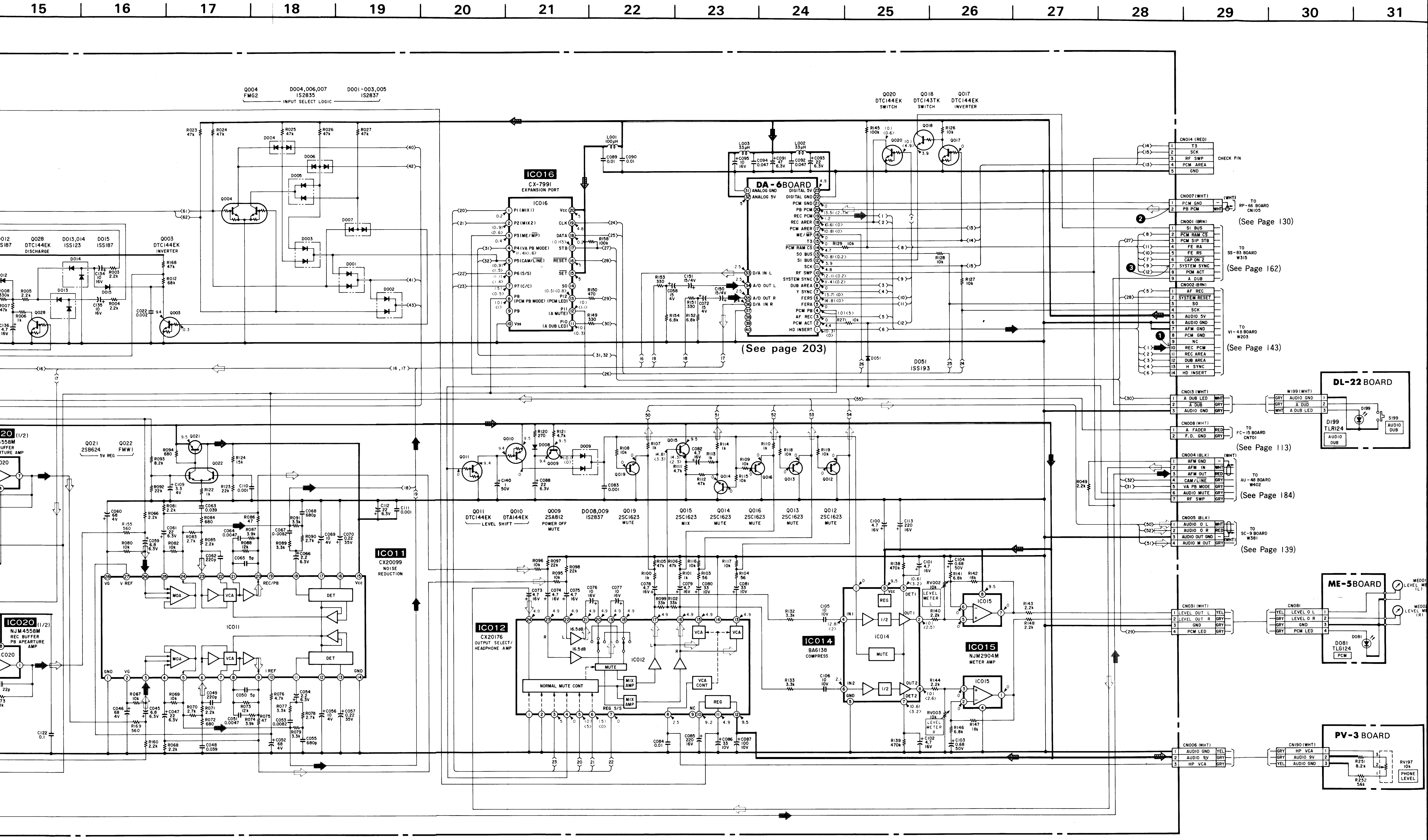

W199
D119
AUDIO DUB
S199
AUDIO DUB
1-626-265-
21

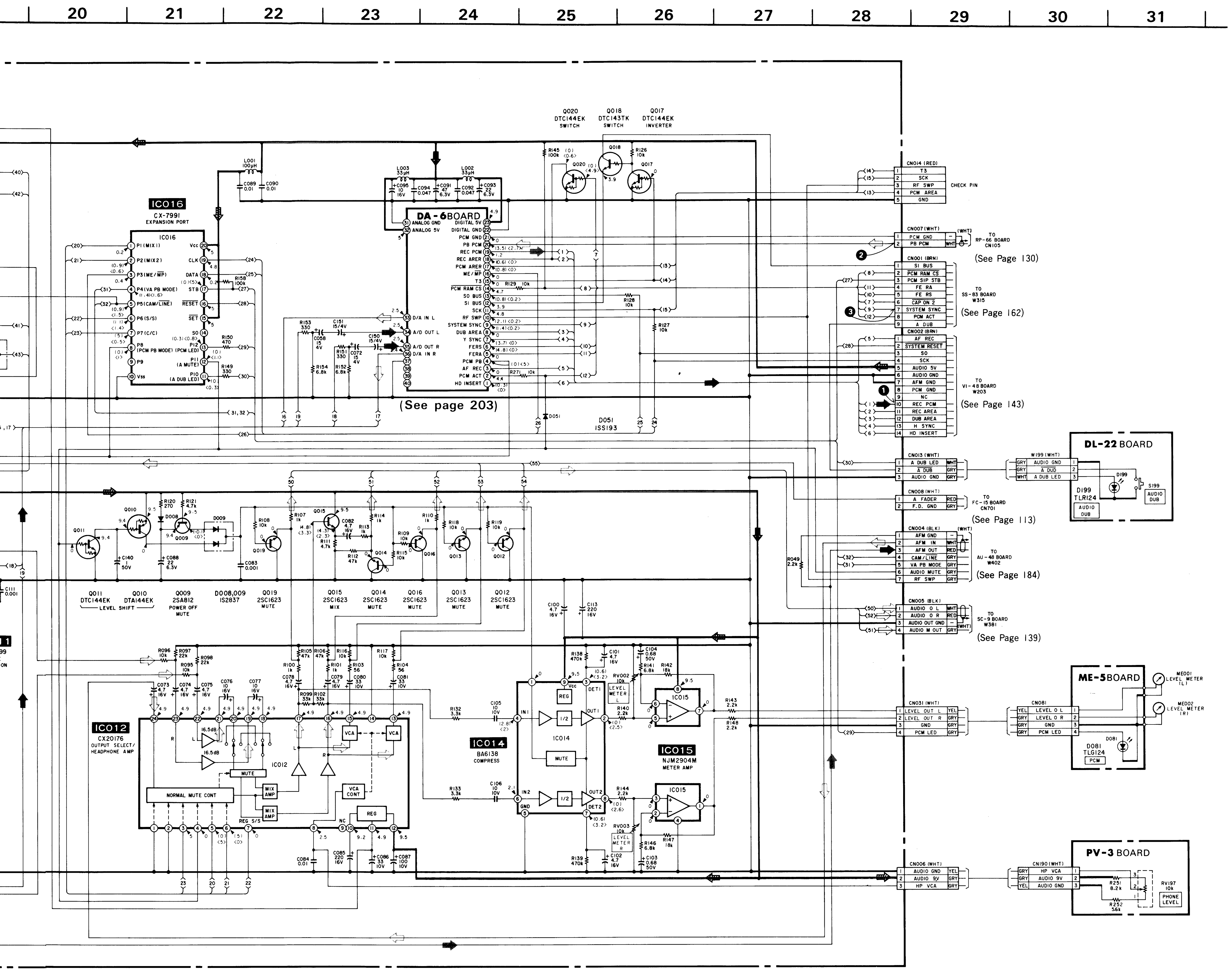
PC-32 (PCM AUDIO), DL-22 (AUDIO DUBBING SWITCH), HJ-4 (HEAD PHONES/MIC JACK), ME-5 (LEVEL METER), PV-3 (HEAD PHONE LEVEL CONTROL), VR-17 (AUDIO REC LEVEL CONTROL) SCHEMATIC DIAGRAM

— Ref. No. PC-32 BOARDS: 6000 series, HJ-4 BOARD: 6400 series, ME-5 BOARD: 6600 series, DL-22, VR-17 BOARDS: 7000 series, PV-3 BOARD: 8000 series —


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
PC-32 BOARD
no mark : REC / PB mode
( ) : REC mode
< > : PB mode
MIC UNIT (STEREO)
CN401 (WHT)
MIC IN L
MIC IN R
MIC GND
MIC 9V
CN003 (WHT)
J001 (1/2)
L
MIC
R
Q025 2SC1623 MIC AMP
Q026 2SC1623 MIC AMP
Q029 FMW1 AGC
IC021 (1/2) NJM4558M MIC AMP
Q030 2SK94 FADER
Q031 2SK94 FADER
FL001 LPF
FL002 LPF
IC004 (1/2) NJM3414M BUFFER
IC004 (1/2) NJM3414M FADER CONTROL AMP
IC002 M5201FP SELECT/AMP
D121 1SS123
D050 1S2837
Q027 2SC1623 AGC BUFFER
D012 1SS187
Q028 DTC144EK DISCHARGE
D013,014 1SS123
D015 1SS187
Q003 DTC144EK INVERTER
TO CC-13 BOARD CN902
CN030 (BLK)
AUDIO 8.6V
GND
(See Page 140)
PS001 PCM-250 (0.25A)
L004 15μH
D020 1S2837
TP001
Q005 FMG2 INVERTER
Q006 FMG2 INVERTER
IC005 M5201FP SELECT/AMP
IC006 M5201FP SELECT/AMP
IC007 M5201FP SELECT/AMP
IC008 M5201FP SELECT/AMP
IC009 M5201FP EQ AMP BUFFER
IC010 M5201FP EQ AMP BUFFER
FL004 LPF
FL003 LPF
IC020 (1/2) NJM4558M REC BUFFER PB APEARTURE AMP
Q024 DTC144EK REC/PB/SWITCH
Q023 DTC144EK REC/PB SWITCH
Q007 DTC144EK INVERTER
Q021 2SB624
Q022 FMW1
5V REG
VG
V REF
GND
HJ-4 BOARD
PHONES
J071
L071 1μH
L072 1μH
L073 1μH
D071
D072
D073
D074
D071-074 RD9.1M
W071 (WHT)
PH OUT L
PH OUT R
PH OUT GND
(See Page 140)
TO PJ-19 BOARD W061
CN012 (YEL)
AUDIO IN L
AUDIO IN R
GND
PH OUT L
PH OUT R
PH OUT GND
MIC
J072
L074 1μH
L075 1μH
D075
D076
D077
D078
D075-078 RD9.1M
W072 (WHT)
MIC JACK OUT
MIC JACK IN
GND
MIC IN SW
TO AU-48 BOARD CN403
(See Page 182)
VR-17 BOARD
RV200 10k×2
REC LEVEL
W200 (WHT)
VOL OUT L
VOL OUT R
VOL GND
VOL IN L
VOL IN R
VOL GND
CN011 (WHT)

GRAM


15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
Q004 FMG2
D004,006,007 1S2835
D001-003,005 1S2837
INPUT SELECT LOGIC
Q028 DTC144EK DISCHARGE
D013,014 1SS123
D015 1SS187
Q003 DTC144EK INVERTER
IC016 CX-7991 EXPANSION PORT
DA-6 BOARD
(See page 203)
D051 1SS193
Q020 DTC144EK SWITCH
Q018 DTC143TK SWITCH
Q017 DTC144EK INVERTER
CN014 (RED)
CHECK PIN
CN007 (WHT)
TO RP-66 BOARD CN105
(See Page 130)
CN001 (BRN)
TO SS-83 BOARD W315
(See Page 162)
CN002 (BRN)
TO VI-48 BOARD W203
(See Page 143)
CN013 (WHT)
DL-22 BOARD
D199 TLR124
S199 AUDIO DUB
CN008 (WHT)
TO FC-15 BOARD CN701
(See Page 113)
CN004 (BLK)
TO AU-48 BOARD W402
(See Page 184)
CN005 (BLK)
TO SC-9 BOARD W381
(See Page 139)
IC020 NJM4558M BUFFER
Q021 2SB624
Q022 FMW1
5V REG
IC011 CX20099 NOISE REDUCTION
IC020 NJM4558M REC BUFFER PB APEARTURE AMP
Q011 DTC144EK
Q010 DTA144EK
LEVEL SHIFT
Q009 2SA812 POWER OFF MUTE
D008,009 1S2837
Q019 2SC1623 MUTE
Q015 2SC1623 MIX
Q014 2SC1623 MUTE
Q016 2SC1623 MUTE
Q013 2SC1623 MUTE
Q012 2SC1623 MUTE
IC012 CX20176 OUTPUT SELECT/ HEADPHONE AMP
IC014 BA6138 COMPRESS
IC015 NJM2904M METER AMP
ME-5 BOARD
CN031 (WHT)
CN081
D081 TLG124
CN006 (WHT)
CN190 (WHT)
PV-3 BOARD
RV197 10k PHONE LEVEL


20
21
22
23
24
25
26
27
28
29
30
31
IC016
CX-7991
EXPANSION PORT
P1 (MIX1)
P2 (MIX2)
P3 (ME/MP)
P4 (VA PB MODE)
P5 (CAM/LINE)
P6 (S/S)
P7 (C/C)
P8 (PCM PB MODE) (PCM LED)
P9
Vss
Vcc
CLK
DATA
STB
RESET
SET
SO
P12
P11 (A MUTE)
P10 (A DUB LED)
L001 100μH
C089 0.01
C090 0.01
R158 100k
R150 470
R149 330
DA-6BOARD
ANALOG GND
ANALOG 5V
DIGITAL 5V
DIGITAL GND
PCM GND
PB PCM
REC PCM
REC ARER
PCM ARER
ME/MP
T3
PCM RAM CS
SO BUS
SI BUS
SCK
RF SWP
SYSTEM SYNC
DUB AREA
Y SYNC
FERS
FERA
PCM PB
AF REC
PCM ACT
HD INSERT
D/A IN L
A/D OUT L
A/D OUT R
D/A IN R
(See page 203)
L003 33μH
L002 33μH
C095 10 16V
C094 0.047
C091 47 6.3V
C092 0.047
C093 22 6.3V
R153 330
C151 15/4V
C058 15 4V
R154 6.8k
R151 330
C072 15 4V
R152 6.8k
C150 15/4V
R129 10k
R271 10k
Q020 DTC144EK SWITCH
Q018 DTC143TK SWITCH
Q017 DTC144EK INVERTER
R145 100k
R126 10k
R128 10k
R127 10k
D051 1SS193
Q011 DTC144EK
Q010 DTA144EK
LEVEL SHIFT
Q009 2SA812 POWER OFF MUTE
D008,009 1S2837
Q019 2SC1623 MUTE
Q015 2SC1623 MIX
Q014 2SC1623 MUTE
Q016 2SC1623 MUTE
Q013 2SC1623 MUTE
Q012 2SC1623 MUTE
R120 270
R121 4.7k
C140 1 50V
C088 22 6.3V
C083 0.001
R108 10k
R107 1k
C082 4.7 16V
R111 4.7k
R112 47k
R113 1k
R114 1k
R109 10k
R115 10k
R110 1k
R118 10k
R119 10k
IC012
CX20176
OUTPUT SELECT/ HEADPHONE AMP
NORMAL MUTE CONT
MUTE
MIX AMP
VCA
VCA CONT
REG
REG S/S
16.5dB
C073 4.7 16V
C074 4.7 16V
C075 4.7 16V
C076 10 16V
C077 10 16V
R096 10k
R097 22k
R098 22k
R095 10k
R105 47k
R106 47k
R116 10k
R117 10k
R100 1k
R101 1k
R103 56
R104 56
C078 4.7 16V
C079 4.7 16V
C080 33 10V
C081 33 10V
R099 33k
R102 33k
C084 0.01
C085 220 16V
C086 33 10V
C087 100 10V
IC014
BA6138
COMPRESS
IN1
IN2
OUT1
OUT2
DET1
DET2
GND
1/2
R132 3.3k
R133 3.3k
C105 10 10V
C106 10 10V
C100 4.7 16V
C113 220 16V
R138 470k
R139 470k
C101 4.7 16V
C102 4.7 16V
IC015
NJM2904M
METER AMP
RV002 10k LEVEL METER L
RV003 10k LEVEL METER R
R140 2.2k
R144 2.2k
R141 6.8k
R142 18k
R146 6.8k
R147 18k
C104 0.68 50V
C103 0.68 50V
R143 2.2k
R148 2.2k
R049 2.2k
CN014 (RED)
T3
SCK
RF SWP
PCM AREA
GND
CHECK PIN
CN007 (WHT)
PCM GND
PB PCM
TO RP-66 BOARD CN105
(See Page 130)
CN001 (BRN)
SI BUS
PCM RAM CS
PCM SIP STB
FE RA
FE RS
CAP ON 2
SYSTEM SYNC
PCM ACT
A DUB
TO SS-83 BOARD W315
(See Page 162)
CN002 (BRN)
AF REC
SYSTEM RESET
SO
SCK
AUDIO 5V
AUDIO GND
AFM GND
PCM GND
NC
REC PCM
REC AREA
DUB AREA
H SYNC
HD INSERT
TO VI-48 BOARD W203
(See Page 143)
CN013 (WHT)
A DUB LED
A DUB
AUDIO GND
W199 (WHT)
AUDIO GND
A DUD
A DUB LED
DL-22 BOARD
D199
D199 TLR124
AUDIO DUB
S199
AUDIO DUB
CN008 (WHT)
A FADER
F.D. GND
TO FC-15 BOARD CN701
(See Page 113)
CN004 (BLK)
AFM GND
AFM IN
AFM OUT
CAM/LINE
VA PB MODE
AUDIO MUTE
RF SWP
TO AU-48 BOARD W402
(See Page 184)
CN005 (BLK)
AUDIO O L
AUDIO O R
AUDIO OUT GND
AUDIO M OUT
TO SC-9 BOARD W381
(See Page 139)
ME-5BOARD
ME001 LEVEL METER (L)
ME002 LEVEL METER (R)
CN031 (WHT)
LEVEL OUT L
LEVEL OUT R
GND
PCM LED
CN081
LEVEL O L
LEVEL O R
GND
PCM LED
D081
D081 TLG124
PCM
PV-3 BOARD
CN006 (WHT)
AUDIO GND
AUDIO 9V
HP VCA
CN190 (WHT)
HP VCA
AUDIO 9V
AUDIO GND
R251 8.2k
R252 5.6k
RV197 10k
PHONE LEVEL

Note (Schematic Diagram)

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors are in μF unless otherwise noted. pF: μμF
  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, chip resistor are 1/10W unless otherwise noted.
  kΩ : 1000Ω, MΩ : 1000kΩ.
- All variable and semi-fixed resistors have characteristics curve B, unless otherwise noted.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.
- ▭ : panel disignation.
- ▭ : adjustment for repair.
- ━ : B + line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- All voltage are dc measured with a VOM (10MΩ)
- ⇨ indicates the I/O direction of B lines (+, −).
- The ● number is the reference number in the waveform diagram.

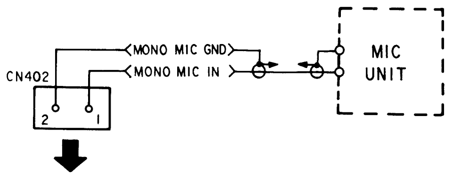
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- **Signal path**
  - ➡ :**REC AUDIO SIGNAL**
  - ⇨ :**PB AUDIO SIGNAL**

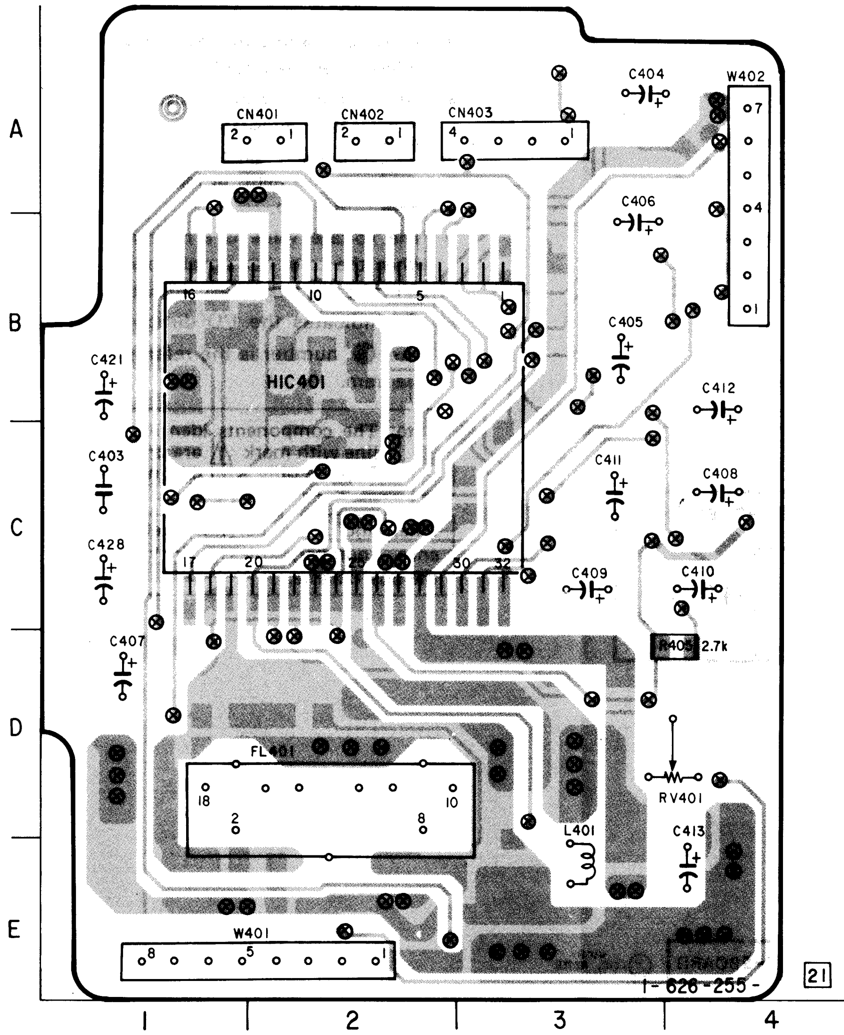
AU-48 (AFM AUDIO), MS-11 (NARRATION MIC SWITCH) PRINTED WIRING BOARD

— Ref. No. AU-48, MS-11 BOARDS: 8000 series —

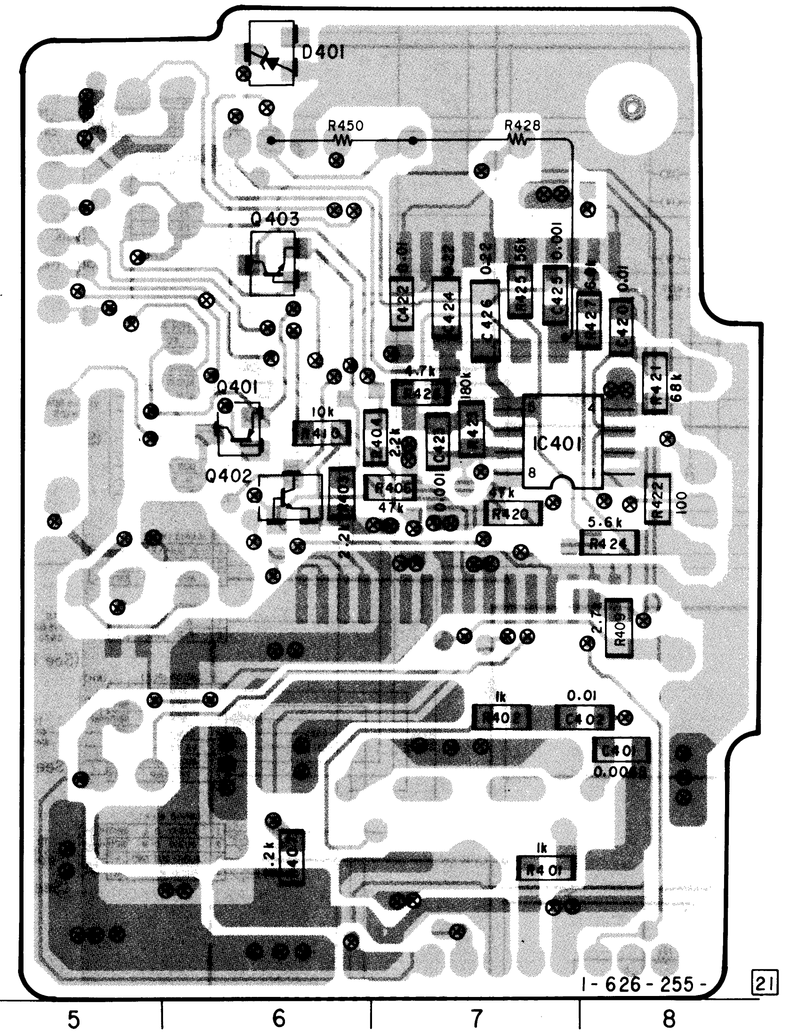

CN402
MONO MIC GND
MONO MIC IN
2
1
MIC UNIT

AU-48 BOARD	
CN401	A-2
CN402	A-2
CN403	A-3
D401	A-6
HIC401	B-2
IC401	C-7
Q401	B-6
Q402	C-6
Q403	B-6
RV401	D-4

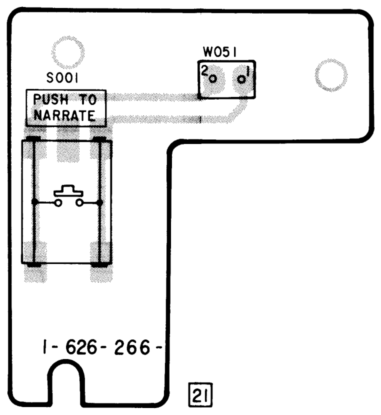
AU-48 BOARD (COMPONENT SIDE)


A
B
C
D
E
1
2
3
4
CN401
CN402
CN403
C404
W402
C406
C405
C412
C421
HIC401
C403
C411
C408
C428
C409
C410
C407
R405 2.7k
FL401
RV401
L401
C413
W401
1-626-255-
21

AU-48 BOARD (CONDUCTOR SIDE)


D401
R450
R428
Q403
Q401
Q402
IC401
10k
4.7k
190k
47k
5.6k
68k
100
2.7k
1k
0.01
0.0022
2.2k
R401
R402
R409
R420
R421
R422
R424
C401
C402
5
6
7
8
1-626-255-
21

MS-11 BOARD (COMPONENT SIDE)


S001
PUSH TO NARRATE
W051
1-626-266-
21

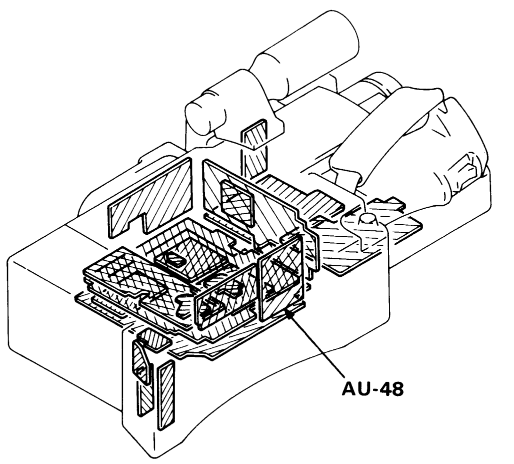
Note (Printed Wiring Board)

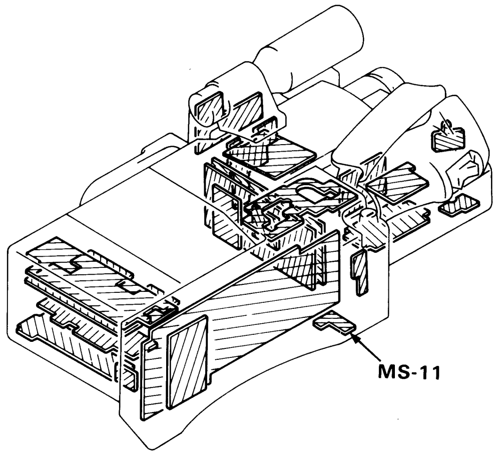
- ○— : indicates a lead wire mounted on the component side.
- ●— : indicates a lead wire mounted on the conductor side.
- ⊗ : Through hole.
- ▨ : Pattern from the side which enables seeing.
- Pattern of the rear side
- Digital transistor (AU-48: Q401, 402) transistor with resistors. Refer to AU-48 board schematic diagrams for digital transistor.

Note

Conductor side:	Parts on the conductor side being seen from the conductor are stated.
Component side:	Parts on the component side being seen from the component are stated.

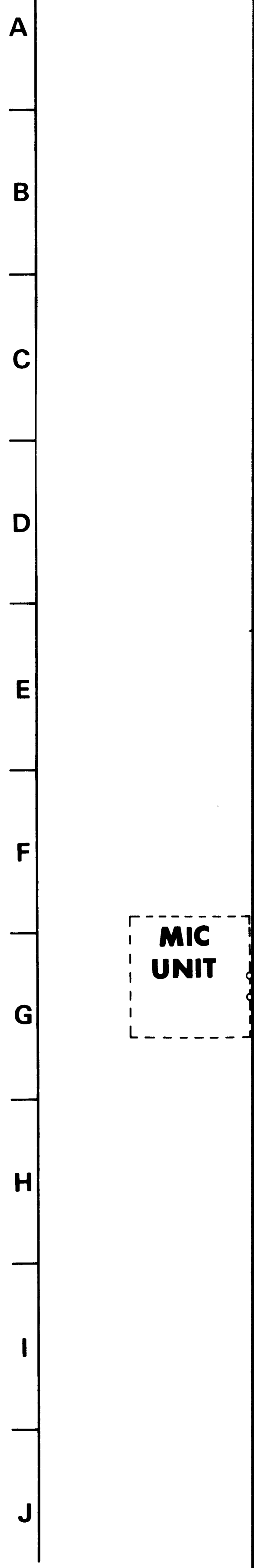
Regarding color indication of pattern
* Pattern being seen in the state from the surface side are indicated in gray pattern.
* Pattern being seen in the state of the rear surface side is indicated in green pattern.





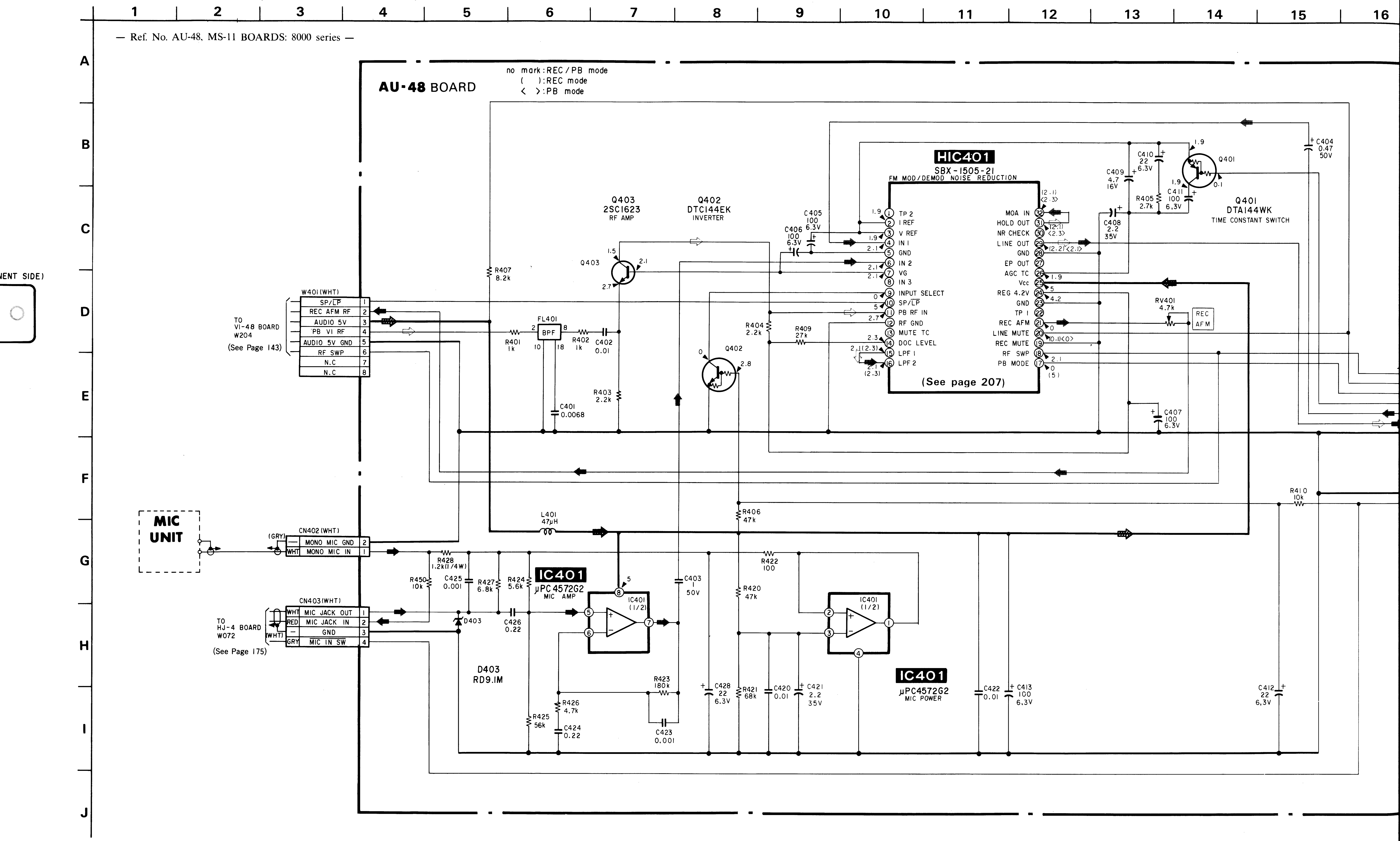
AU-48 (AFM AUDIO

— Ref. No. AU-48,

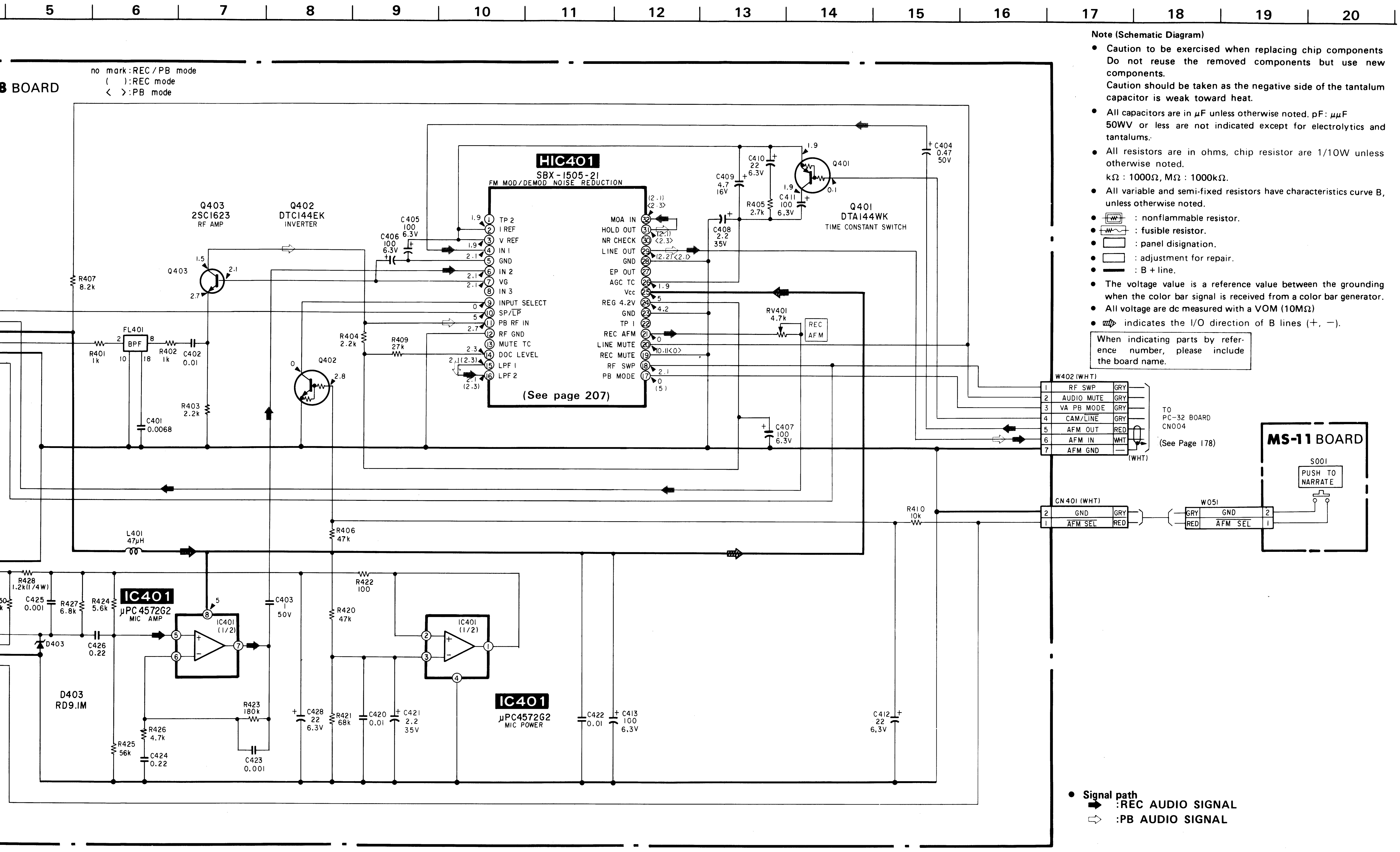

1
A
B
C
D
E
F
G
H
I
J
MIC UNIT

AU-48 (AFM AUDIO), MS-11 (NARRATION MIC SWITCH) SCHEMATIC DIAGRAM

— Ref. No. AU-48, MS-11 BOARDS: 8000 series —


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I J
NENT SIDE)
AU-48 BOARD
no mark:REC/PB mode
( ):REC mode
< >:PB mode
HIC401
SBX-1505-21
FM MOD/DEMOD NOISE REDUCTION
(See page 207)
1 TP 2
2 I REF
3 V REF
4 IN 1
5 GND
6 IN 2
7 VG
8 IN 3
9 INPUT SELECT
10 SP/LP
11 PB RF IN
12 RF GND
13 MUTE TC
14 DOC LEVEL
15 LPF 1
16 LPF 2
32 MOA IN
31 HOLD OUT
30 NR CHECK
29 LINE OUT
28 GND
27 EP OUT
26 AGC TC
25 Vcc
24 REG 4.2V
23 GND
22 TP 1
21 REC AFM
20 LINE MUTE
19 REC MUTE
18 RF SWP
17 PB MODE
Q403 2SC1623 RF AMP
Q402 DTC144EK INVERTER
Q401 DTA144WK TIME CONSTANT SWITCH
W401(WHT)
1 SP/LP
2 REC AFM RF
3 AUDIO 5V
4 PB VI RF
5 AUDIO 5V GND
6 RF SWP
7 N.C
8 N.C
TO VI-48 BOARD W204 (See Page 143)
FL401 BPF
R401 1k
R402 1k
C402 0.01
C401 0.0068
R403 2.2k
R407 8.2k
R404 2.2k
R409 27k
C405 100 6.3V
C406 100 6.3V
C408 2.2 35V
C409 4.7 16V
C410 22 6.3V
C411 100 6.3V
R405 2.7k
C404 0.47 50V
C407 100 6.3V
RV401 4.7k
REC AFM
R410 10k
L401 47μH
MIC UNIT
CN402(WHT)
(GRY)
2 MONO MIC GND
1 MONO MIC IN
CN403(WHT)
1 MIC JACK OUT
2 MIC JACK IN
3 GND
4 MIC IN SW
TO HJ-4 BOARD W072 (See Page 175)
R428 1.2k(1/4W)
R450 10k
C425 0.001
R427 6.8k
R424 5.6k
IC401 μPC4572G2 MIC AMP
IC401 (1/2)
C426 0.22
D403
D403 RD9.1M
C403 1 50V
R423 180k
C423 0.001
R426 4.7k
R425 56k
C424 0.22
R406 47k
R422 100
R420 47k
R421 68k
C428 22 6.3V
C420 0.01
C421 2.2 35V
IC401 μPC4572G2 MIC POWER
C422 0.01
C413 100 6.3V
C412 22 6.3V

SCHEMATIC DIAGRAM


5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
B BOARD
no mark : REC / PB mode
( ) : REC mode
< > : PB mode
HIC401
SBX-1505-21
FM MOD/DEMOD NOISE REDUCTION
(See page 207)
TP 2
I REF
V REF
IN I
GND
IN 2
VG
IN 3
INPUT SELECT
SP/LP
PB RF IN
RF GND
MUTE TC
DOC LEVEL
LPF I
LPF 2
MOA IN
HOLD OUT
NR CHECK
LINE OUT
GND
EP OUT
AGC TC
Vcc
REG 4.2V
GND
TP I
REC AFM
LINE MUTE
REC MUTE
RF SWP
PB MODE
Q403
2SC1623
RF AMP
Q402
DTC144EK
INVERTER
Q401
DTA144WK
TIME CONSTANT SWITCH
FL401
BPF
R401 1k
R402 1k
C402 0.01
C401 0.0068
R403 2.2k
R407 8.2k
R404 2.2k
R409 27k
C405 100 6.3V
C406 100 6.3V
C404 0.47 50V
C409 4.7 16V
C410 22 6.3V
C411 100 6.3V
R405 2.7k
C408 2.2 35V
RV401 4.7k
REC AFM
C407 100 6.3V
L401 47μH
R406 47k
R410 10k
W402 (WHT)
1 RF SWP GRY
2 AUDIO MUTE GRY
3 VA PB MODE GRY
4 CAM/LINE GRY
5 AFM OUT RED
6 AFM IN WHT
7 AFM GND
(WHT)
TO
PC-32 BOARD
CN004
(See Page 178)
CN401 (WHT)
2 GND GRY
1 AFM SEL RED
W051
GRY GND 2
RED AFM SEL 1
MS-11 BOARD
S001
PUSH TO NARRATE
R428 1.2k(1/4W)
C425 0.001
R427 6.8k
R424 5.6k
IC401
μPC4572G2
MIC AMP
IC401 (1/2)
C426 0.22
D403
D403
RD9.1M
C403 1 50V
R422 100
R420 47k
R423 180k
R426 4.7k
R425 56k
C424 0.22
C423 0.001
C428 22 6.3V
R421 68k
C420 0.01
C421 2.2 35V
IC401
μPC4572G2
MIC POWER
C422 0.01
C413 100 6.3V
C412 22 6.3V

Note (Schematic Diagram)

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors are in μF unless otherwise noted. pF: μμF
  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, chip resistor are 1/10W unless otherwise noted.
  kΩ : 1000Ω, MΩ : 1000kΩ.
- All variable and semi-fixed resistors have characteristics curve B, unless otherwise noted.
- : nonflammable resistor.
- : fusible resistor.
- ☐ : panel disignation.
- ☐ : adjustment for repair.
- ▬ : B + line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- All voltage are dc measured with a VOM (10MΩ)
- ➯ indicates the I/O direction of B lines (+, −).

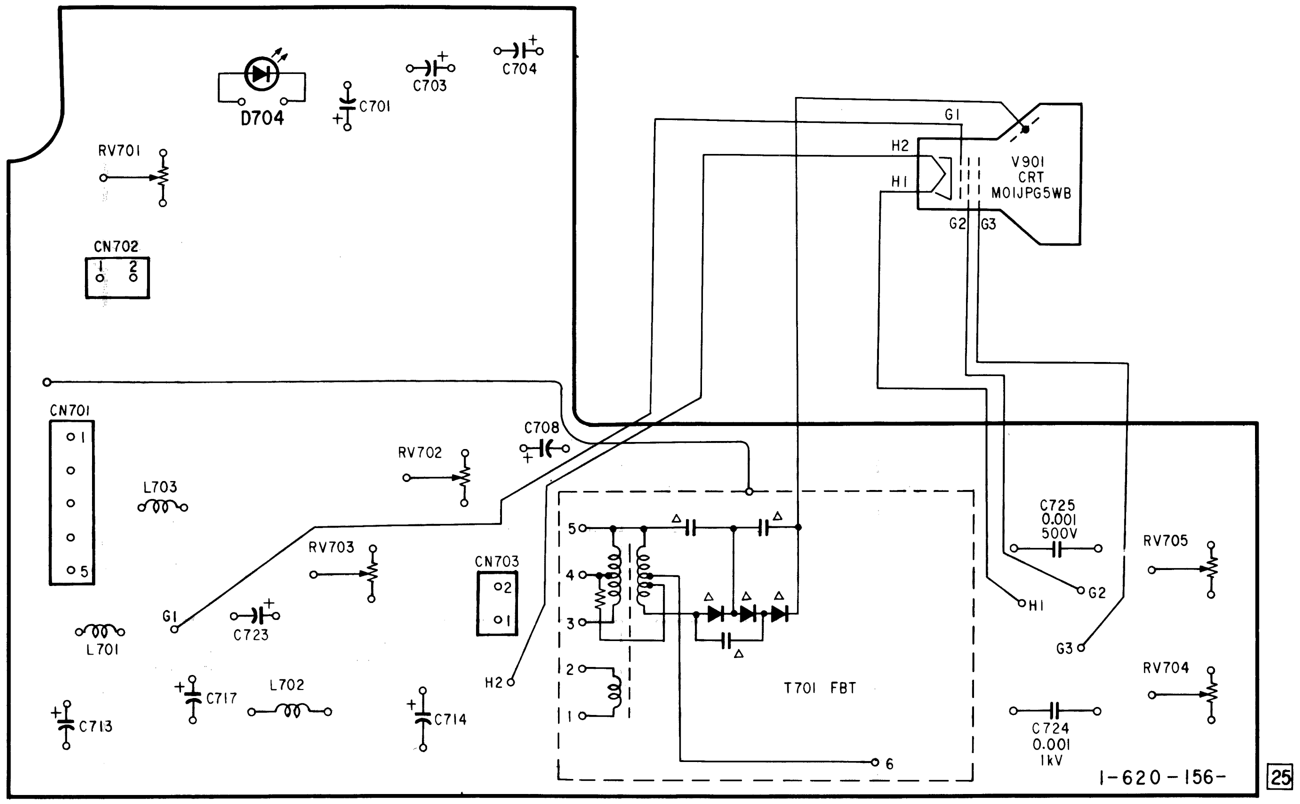
When indicating parts by reference number, please include the board name.

- Signal path
  ➡ :REC AUDIO SIGNAL
  ⇨ :PB AUDIO SIGNAL

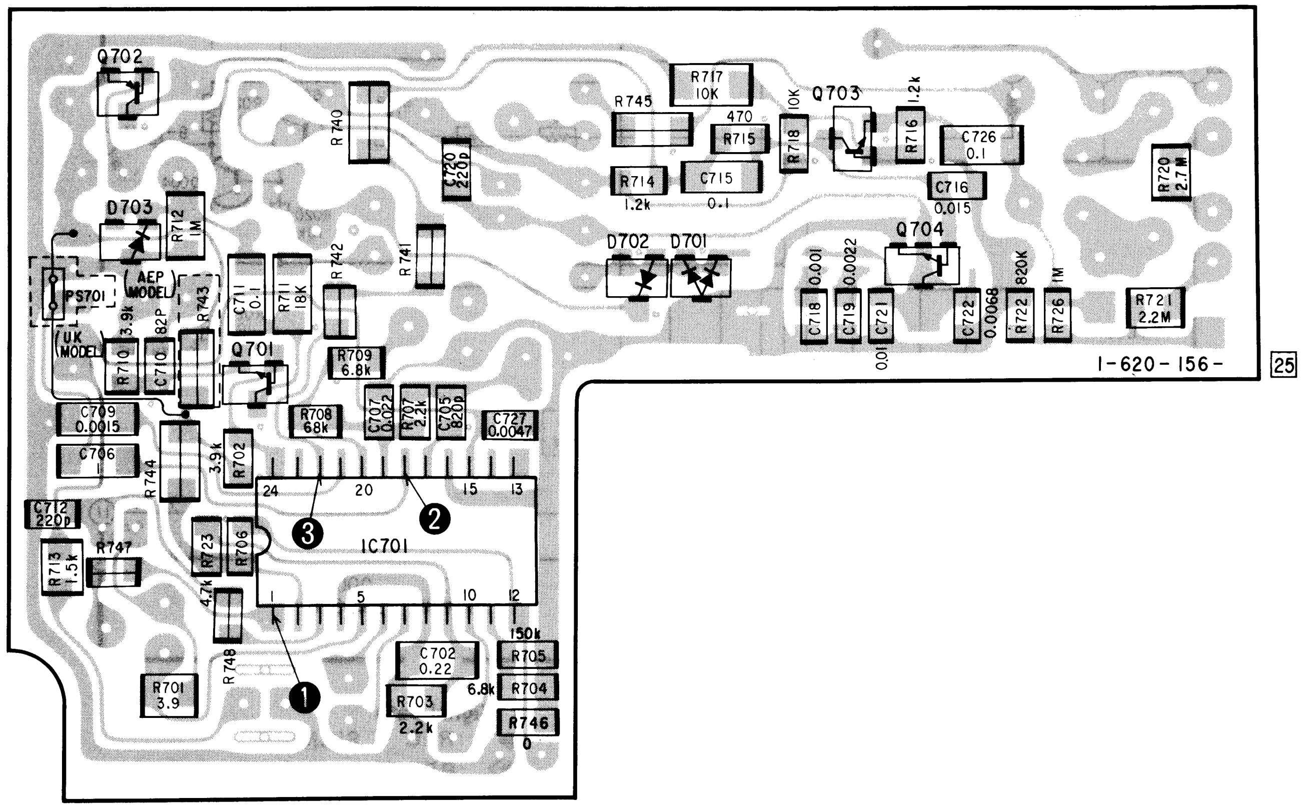
VF-7 (VIEW FINDER PROCESS) PRINTED WIRING BOARD

— Ref. No. VF-7 BOARD: 8000 series —

VF-7 BOARD (COMPONENT SIDE)

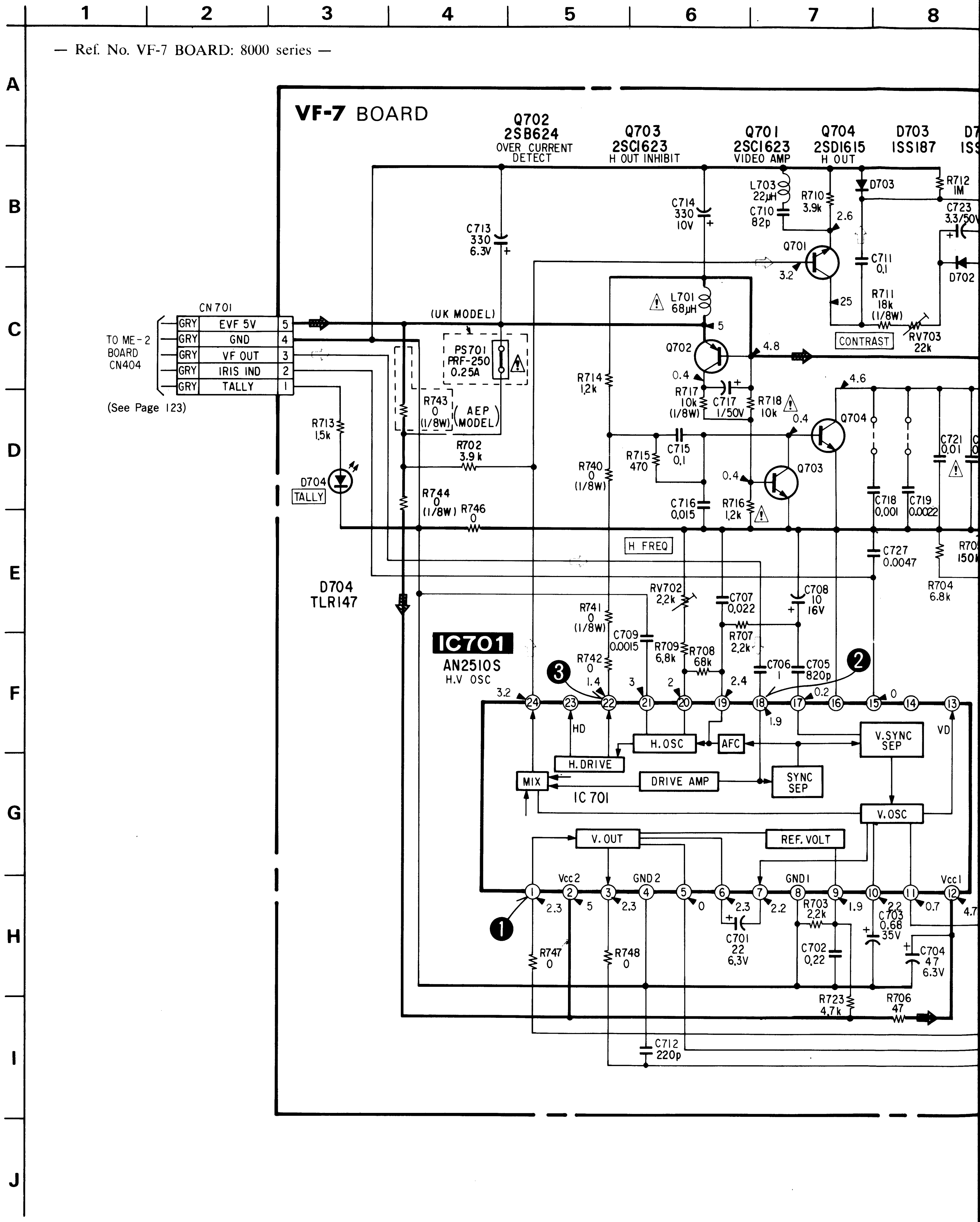

D704
C701
C703
C704
RV701
CN702
V901 CRT M01JPG5WB
G1
H2
H1
G2
G3
CN701
L703
RV702
C708
RV703
CN703
C725 0.001 500V
RV705
RV704
L701
C723
C717
L702
C713
C714
T701 FBT
C724 0.001 1kV
1-620-156-
25

VF-7 BOARD (CONDUCTOR SIDE)


Q702
R717 10K
R745
Q703
R740
R715 470
R718 10K
R716 1.2k
C726 0.1
C720 820p
R714 1.2k
C715 0.1
C716 0.015
R720 2.7M
D703
R712 1M
D702
D701
Q704
PS701
AEP MODEL
UK MODEL
R743
R742
R741
C711 0.1
R711 18K
C718 0.001
C719 0.0022
C721 0.01
C722 0.0068
R722 820K
R726 1M
R721 2.2M
R710 3.9k
C710 82P
Q701
R709 6.8k
C709 0.0015
C706
R744
R702 3.9k
R708 68k
C707 0.022
R707 2.2k
C705 820p
C727 0.0047
C712 220p
R713 1.5k
R747
R723 4.7k
R706
IC701
R748
C702 0.22
R705 150k
R704 6.8k
R701 3.9
R703 2.2k
R746 0
1-620-156-
25

VF-7 (VIEW FINDER PROCESS) SCHEMATIC DIAGRAM

— Ref. No. VF-7 BOARD: 8000 series —


1
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A
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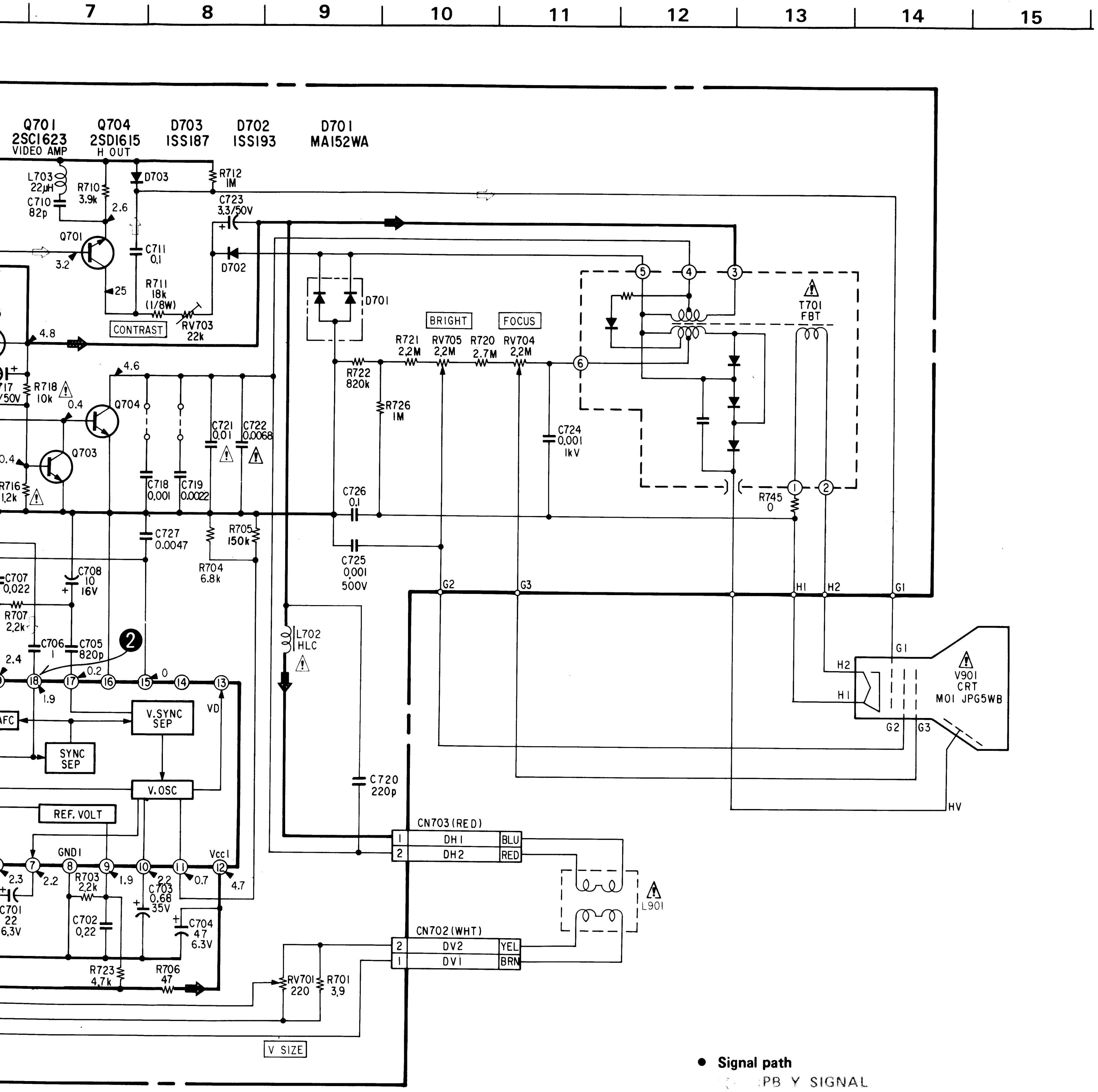
I
J
VF-7 BOARD
Q702 2SB624 OVER CURRENT DETECT
Q703 2SC1623 H OUT INHIBIT
Q701 2SC1623 VIDEO AMP
Q704 2SD1615 H OUT
D703 1SS187
L703 22μH
R710 3.9k
C710 82p
D703
R712 1M
C723 3.3/50V
C714 330 10V
C713 330 6.3V
Q701
C711 0.1
D702
R711 18k (1/8W)
CONTRAST
RV703 22k
L701 68μH
CN701
TO ME-2 BOARD CN404
(See Page 123)
GRY EVF 5V 5
GRY GND 4
GRY VF OUT 3
GRY IRIS IND 2
GRY TALLY 1
(UK MODEL)
PS701 PRF-250 0.25A
R743 0 (1/8W)
(AEP MODEL)
Q702
R714 1.2k
R717 10k (1/8W)
C717 1/50V
R718 10k
Q704
R713 1.5k
R702 3.9k
R715 470
C715 0.1
R740 0 (1/8W)
Q703
D704 TALLY
R744 0 (1/8W)
R746 0
C716 0.015
R716 1.2k
C718 0.001
C719 0.0022
C721 0.01
H FREQ
C727 0.0047
R704 6.8k
D704 TLR147
RV702 2.2k
C707 0.022
C708 10 16V
R741 0 (1/8W)
C709 0.0015
R709 6.8k
R708 68k
R707 2.2k
R742 0
C706 1
C705 820p
IC701 AN2510S H.V OSC
HD
H.DRIVE
H.OSC
AFC
V.SYNC SEP
VD
MIX
DRIVE AMP
SYNC SEP
IC 701
V.OSC
V.OUT
REF.VOLT
Vcc2
GND2
GND1
Vcc1
C701 22 6.3V
R703 2.2k
C702 0.22
C703 0.68 35V
C704 47 6.3V
R747 0
R748 0
R723 4.7k
R706 47
C712 220p


7
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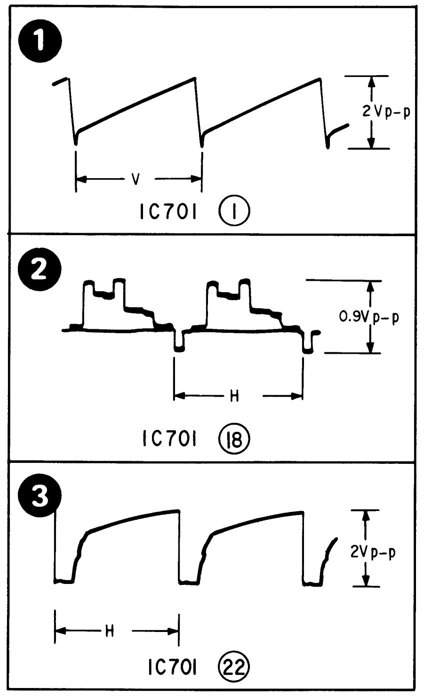
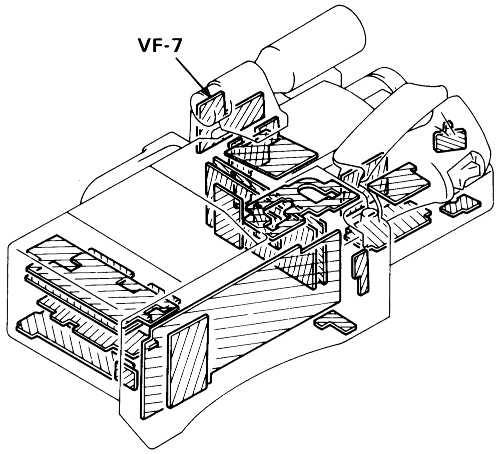
15
Q701 2SC1623 VIDEO AMP
Q704 2SD1615 H OUT
D703 1SS187
D702 1SS193
D701 MA152WA
L703 22μH
R710 3.9k
C710 82p
R712 1M
C723 3.3/50V
D703
C711 0.1
R711 18k (1/8W)
D702
CONTRAST
RV703 22k
R718 10k
R717
Q704
Q703
R716 1.2k
C718 0.001
C719 0.0022
C721 0.01
C722 0.0068
C727 0.0047
R705 150k
R704 6.8k
C707 0.022
C708 10 16V
R707 2.2k
C706 1
C705 820p
V.SYNC SEP
SYNC SEP
V.OSC
REF. VOLT
AFC
VD
GND1
Vcc1
R703 2.2k
C703 0.68 35V
C701 22 6.3V
C702 0.22
C704 47 6.3V
R723 4.7k
R706 47
RV701 220
R701 3.9
V SIZE
D701
BRIGHT
FOCUS
R721 2.2M
RV705 2.2M
R720 2.7M
RV704 2.2M
R722 820k
R726 1M
C724 0.001 1kV
C726 0.1
C725 0.001 500V
T701 FBT
R745 0
L702 HLC
C720 220p
G2
G3
H1
H2
G1
V901 CRT M01 JPG5WB
HV
CN703 (RED)
DH1 BLU
DH2 RED
CN702 (WHT)
DV2 YEL
DV1 BRN
L901
4.8
4.6
0.4
3.2
2.6
25
2.4
1.9
0.2
0
2.3
2.2
1.9
2.2
0.7
4.7

- **Signal path**

PB Y SIGNAL

VF-7 BOARD





Note (Printed Wiring Board)

- ○— : indicates a lead wire mounted on the component side.
- ●— : indicates a lead wire mounted on the conductor side.
- ⊗ : Through hole.
- ▨ : Pattern from the side which enables seeing.
- The ● number is the reference number in the waveform diagram.

Note

Conductor side: Parts on the conductor side being seen from the conductor are stated.

Component side: Parts on the component side being seen from the component are stated.

Regarding color indication of pattern

* Pattern being seen in the state from the surface side are indicated in gray pattern.

* Pattern being seen in the state of the rear surface side is indicated in green pattern.

Note (Schematic Diagram)

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, chip resistor are 1/10W unless otherwise noted.
  kΩ : 1000Ω, MΩ : 1000kΩ.
- All variable and semi-fixed resistors have characteristics curve B, unless otherwise noted.
- ▭ : nonflammable resistor.
- ⏛ : fusible resistor.
- ▭ : panel disignation.
- ▭ : adjustment for repair.
- ▬ : B + line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- All voltage are dc measured with a VOM (10MΩ)
- ⇨ indicates the I/O direction of B lines (+, −).
- The ● number is the reference number in the waveform diagram.

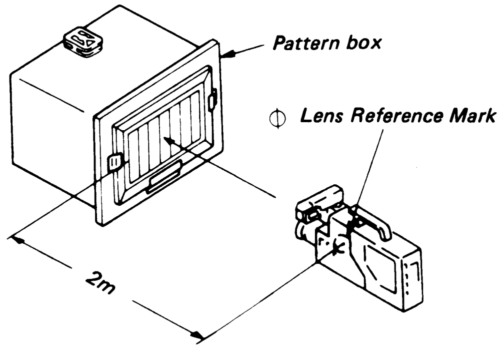
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Note (Schematic Diagram)

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/10W in chip resistance; 1/32W in printing resistance.
  kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- ⏛ : printing resistor.
- ☐ : panel designation.
- ☐ : adjustment for repair.
- ▬ : B+ line.
- Measuring conditions of voltage value and waveform
  (1) The subject is color bar of pattern box.
  (2) Voltage are DC between ground and measurement point.
  (The tester used is the digital multimeter DC10MΩ)
- ⇨ indicates the I/O direction of B lines (+, −).

1. Connection


Pattern box
Lens Reference Mark
2m

2. Adjust the distance so that the output w form of Fig. a and the Fig. b can be obtain.

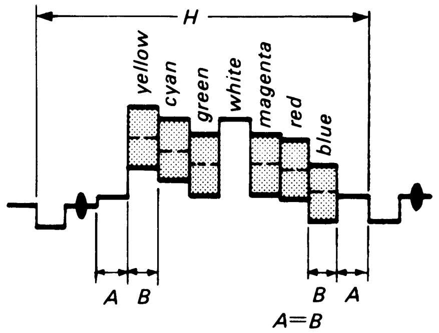

H
yellow
cyan
green
white
magenta
red
blue
A
B
B
A
A=B

Fig. a Camera output waveform of TP345 on VC-37 board.

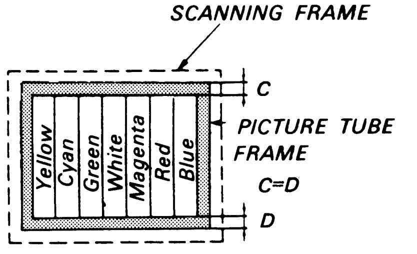
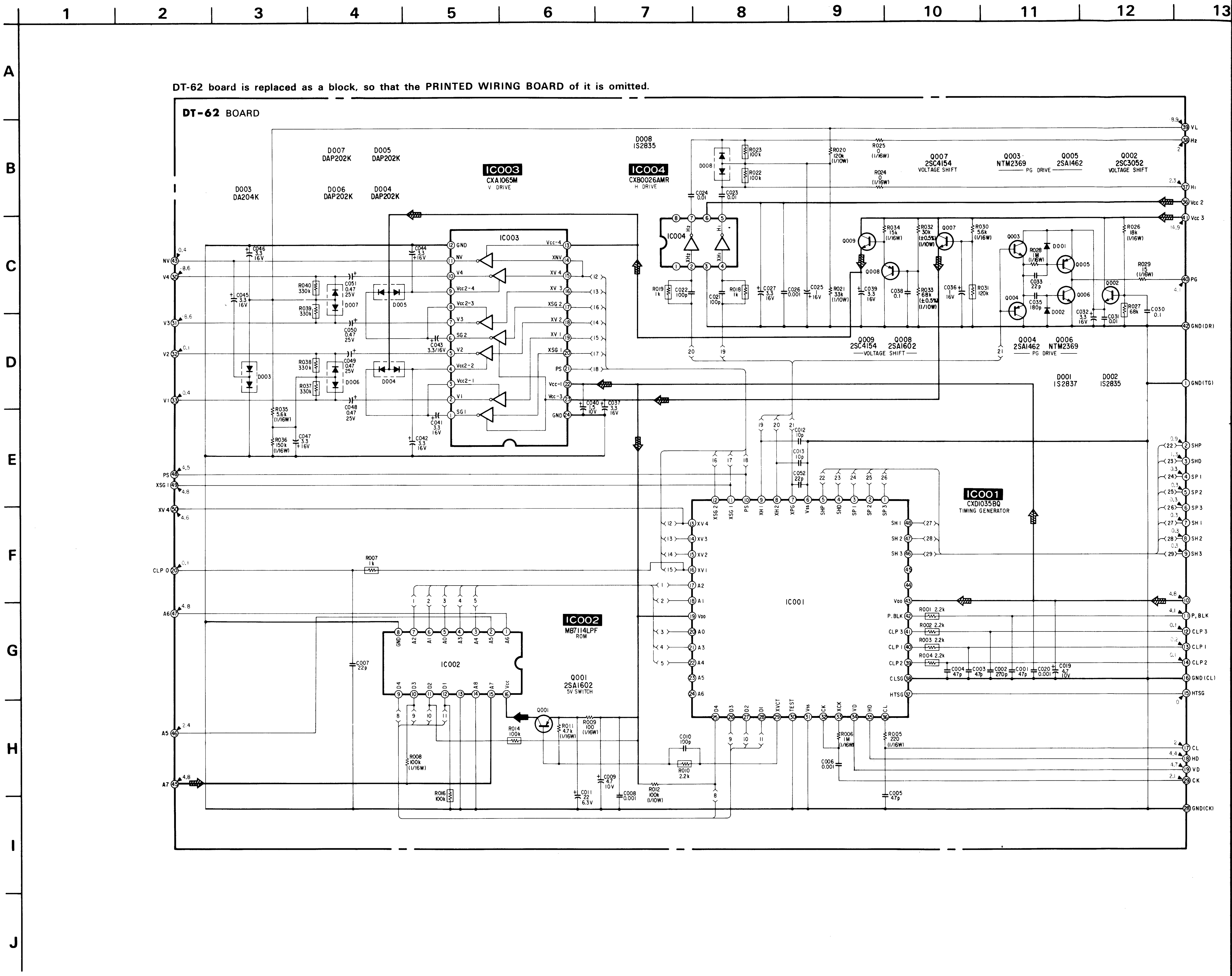

SCANNING FRAME
C
PICTURE TUBE FRAME
C=D
D
Yellow
Cyan
Green
White
Magenta
Red
Blue

Fig. b Picture of TV monitor screen

DT-62 (TIMING GENERATOR, REGISTER DRIVE) SCHEMATIC DIAGRAM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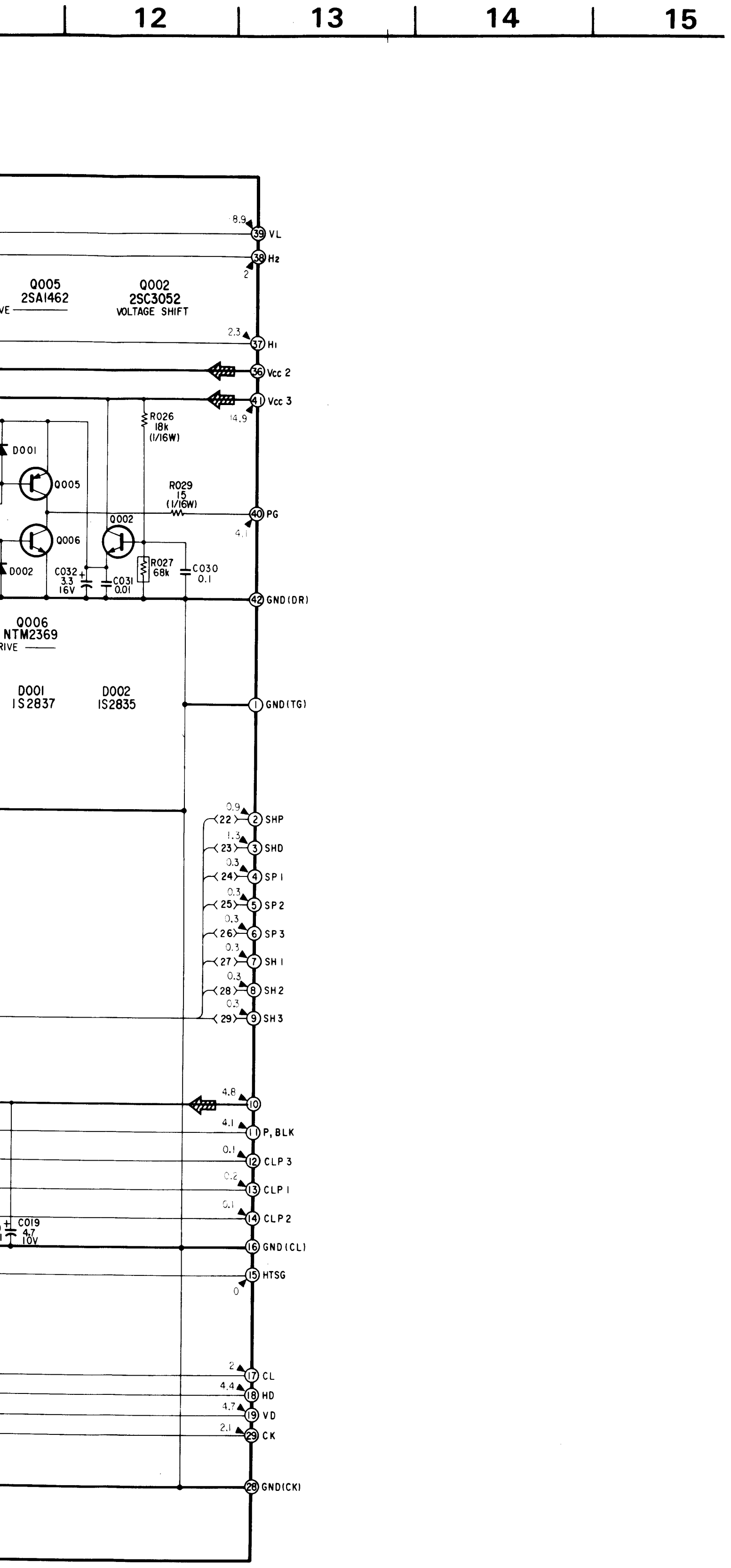
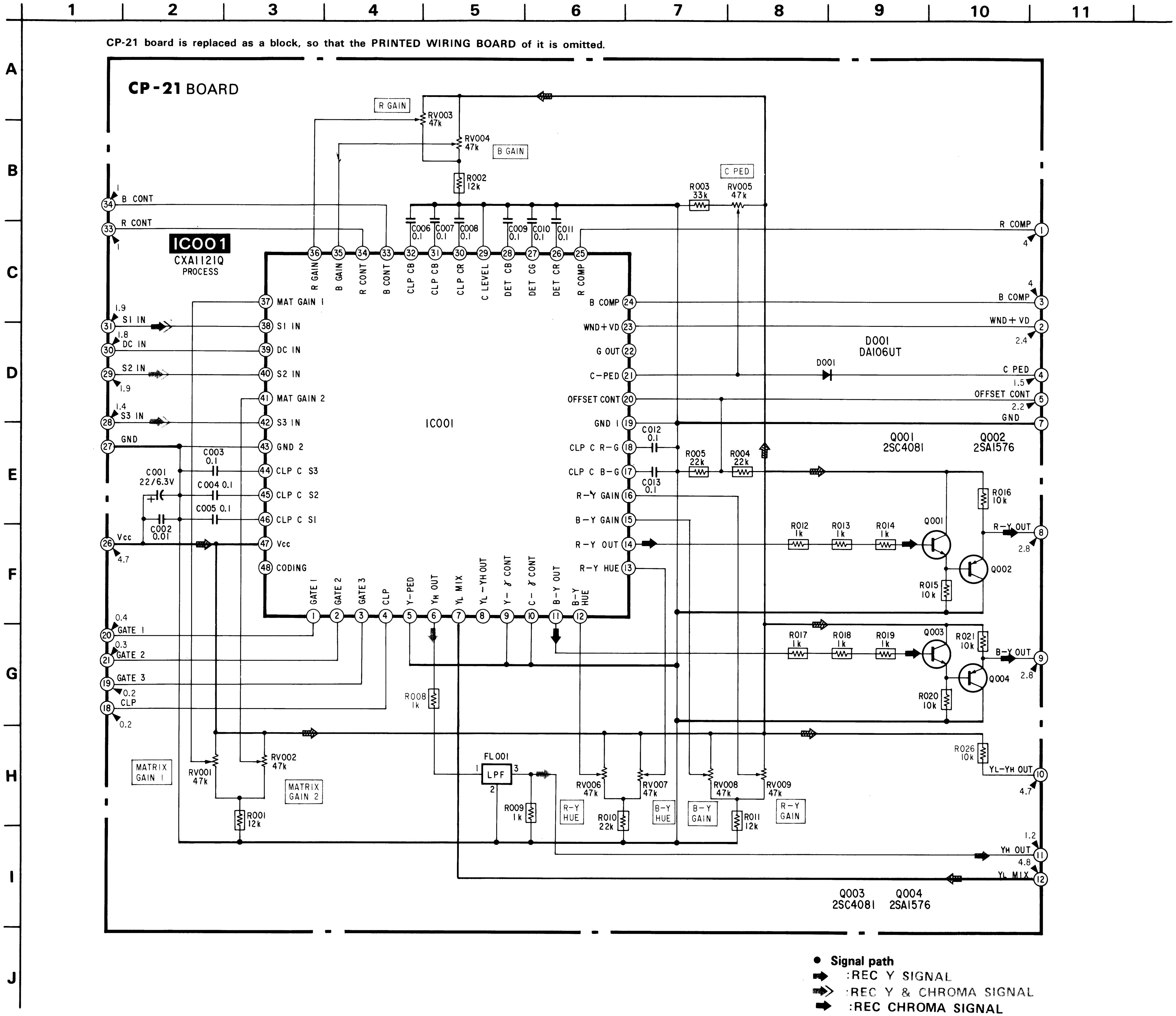
12
13
A
B
C
D
E
F
G
H
I
J
DT-62 BOARD
IC003
CXA1065M
V DRIVE
IC004
CXB0026AMR
H DRIVE
IC001
CXD1035BQ
TIMING GENERATOR
IC002
MB7114LPF
ROM
Q001
2SA1602
5V SWITCH
D003
DA204K
D007
DAP202K
D005
DAP202K
D006
DAP202K
D004
DAP202K
D008
1S2835
Q007
2SC4154
VOLTAGE SHIFT
Q003
NTM2369
Q005
2SA1462
PG DRIVE
Q002
2SC3052
VOLTAGE SHIFT
Q009
2SC4154
Q008
2SA1602
VOLTAGE SHIFT
Q004
2SA1462
Q006
NTM2369
PG DRIVE
D001
1S2837
D002
1S2835
NV
V4
V3
V2
V1
PS
XSG 1
XV 4
CLP 0
A6
A5
A7
VL
H2
H1
Vcc 2
Vcc 3
PG
GND(DR)
GND(TG)
SHP
SHD
SP1
SP2
SP3
SH1
SH2
SH3
P.BLK
CLP 3
CLP 1
CLP 2
GND(CL)
HTSG
CL
HD
VD
CK
GND(CK)

DT-62 board is replaced as a block, so that the PRINTED WIRING BOARD of it is omitted.


12
13
14
15
Q005
2SA1462
Q002
2SC3052
VOLTAGE SHIFT
Q006
NTM2369
D001
1S2837
D002
1S2835
R026 18k (1/16W)
R029 15 (1/16W)
R027 68k
C030 0.1
C032 3.3 16V
C031 0.01
C019 4.7 10V
VL
Hz
Hi
Vcc 2
Vcc 3
PG
GND(DR)
GND(TG)
SHP
SHD
SP1
SP2
SP3
SH1
SH2
SH3
P.BLK
CLP3
CLP1
CLP2
GND(CL)
HTSG
CL
HD
VD
CK
GND(CK)

CP-21 (CAMERA SIGNAL MATRIX) SCHEMATIC DIAGRAM

CP-21 board is replaced as a block, so that the PRINTED WIRING BOARD of it is omitted.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A
B
C
D
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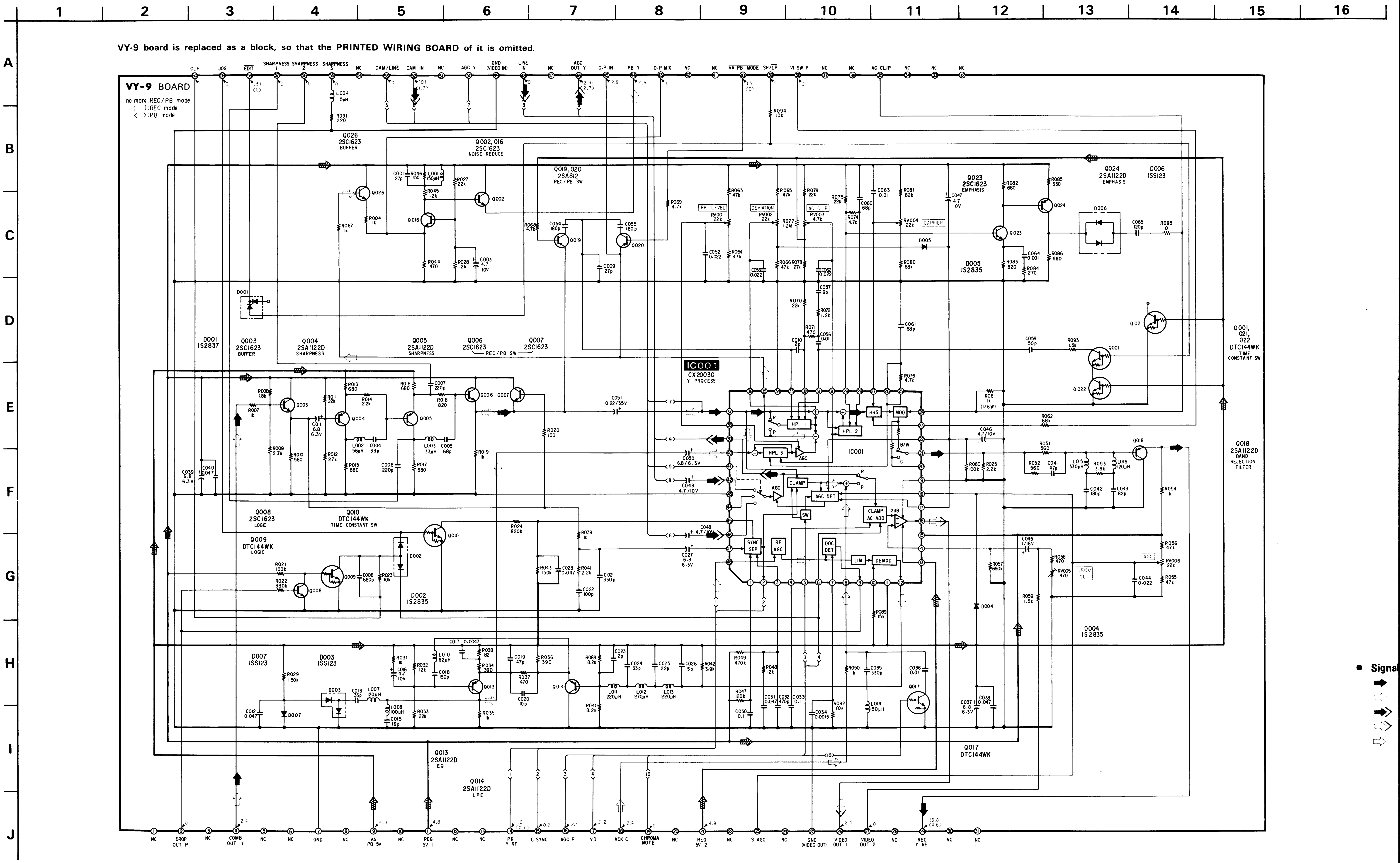
F
G
H
I
J
CP-21 BOARD
IC001
CXA1121Q
PROCESS
R GAIN
RV003 47k
RV004 47k
B GAIN
R002 12k
C PED
R003 33k
RV005 47k
B CONT
R CONT
C006 0.1
C007 0.1
C008 0.1
C009 0.1
C010 0.1
C011 0.1
R GAIN
B GAIN
R CONT
B CONT
CLP CB
CLP CB
CLP CR
C LEVEL
DET CB
DET CG
DET CR
R COMP
MAT GAIN 1
S1 IN
DC IN
S2 IN
MAT GAIN 2
S3 IN
GND 2
CLP C S3
CLP C S2
CLP C S1
Vcc
CODING
GATE 1
GATE 2
GATE 3
CLP
Y-PED
YH OUT
YL MIX
YL-YH OUT
Y-γ CONT
C-γ CONT
B-Y OUT
B-Y HUE
B COMP
WND+VD
G OUT
C-PED
OFFSET CONT
GND 1
CLP C R-G
CLP C B-G
R-Y GAIN
B-Y GAIN
R-Y OUT
R-Y HUE
IC001
GND
C003 0.1
C001 22/6.3V
C004 0.1
C005 0.1
C002 0.01
C012 0.1
C013 0.1
R005 22k
R004 22k
D001
D001
DA106UT
Q001
2SC4081
Q002
2SA1576
R016 10k
R012 1k
R013 1k
R014 1k
R015 10k
R017 1k
R018 1k
R019 1k
R021 10k
R020 10k
Q001
Q002
Q003
Q004
R026 10k
R008 1k
FL001
LPF
R009 1k
R010 22k
R011 12k
R001 12k
RV001 47k
RV002 47k
RV006 47k
RV007 47k
RV008 47k
RV009 47k
MATRIX GAIN 1
MATRIX GAIN 2
R-Y HUE
B-Y HUE
B-Y GAIN
R-Y GAIN
R COMP
B COMP
WND+VD
C PED
OFFSET CONT
GND
R-Y OUT
B-Y OUT
YL-YH OUT
YH OUT
YL MIX
Q003 2SC4081
Q004 2SA1576
1.9
1.8
1.9
1.4
0.4
0.3
0.2
0.2
4.7
4
4
2.4
1.5
2.2
2.8
2.8
4.7
1.2
4.8

- **Signal path**
- ➡ :REC Y SIGNAL
- ⇨ :REC Y & CHROMA SIGNAL
- ➡ :REC CHROMA SIGNAL

VY-9 (Y SIGNAL PROCESS) SCHEMATIC DIAGRAM

VY-9 board is replaced as a block, so that the PRINTED WIRING BOARD of it is omitted.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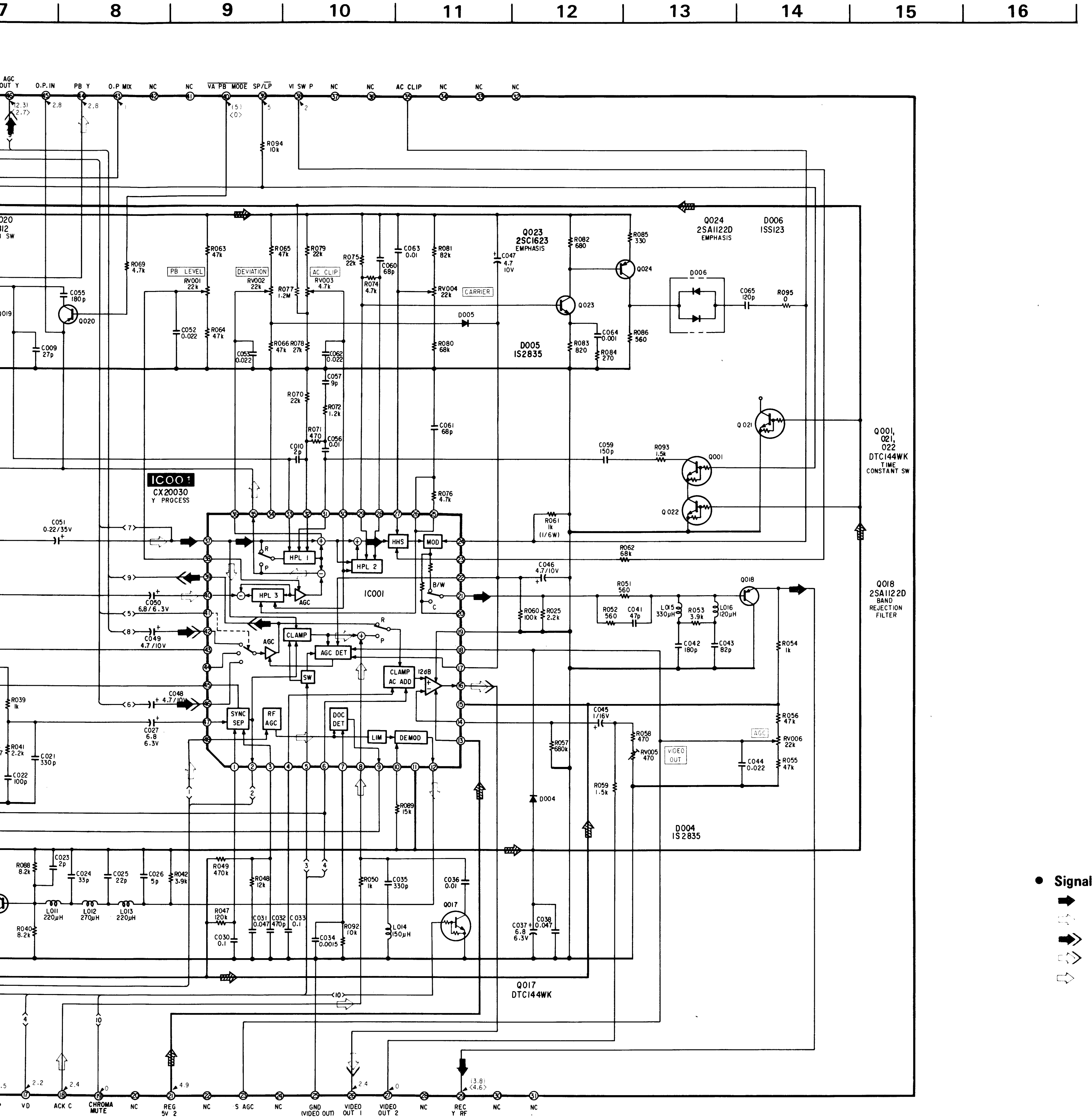
16
A
B
C
D
E
F
G
H
I
J
VY-9 BOARD
no mark: REC/PB mode
( ): REC mode
< >: PB mode
CLF
JOG
EDIT
SHARPNESS 1
SHARPNESS 2
SHARPNESS 3
NC
CAM/LINE
CAM IN
AGC Y
GND (VIDEO IN)
LINE IN
AGC OUT Y
O.P.IN
PB Y
O.P MIX
VA PB MODE
SP/LP
VI SW P
AC CLIP
Q026 2SC1623 BUFFER
Q002, 016 2SC1623 NOISE REDUCE
Q019, 020 2SA812 REC/PB SW
Q023 2SC1623 EMPHASIS
Q024 2SA1122D EMPHASIS
D006 1SS123
D005 1S2835
D001 1S2837
Q003 2SC1623 BUFFER
Q004 2SA1122D SHARPNESS
Q005 2SA1122D SHARPNESS
Q006 2SC1623
Q007 2SC1623
REC/PB SW
IC001 CX20030 Y PROCESS
PB LEVEL
DEVIATION
AC CLIP
CARRIER
HPL 1
HPL 2
HPL 3
HHS
MOD
AGC
CLAMP
AGC DET
SW
SYNC SEP
RF AGC
DOC DET
LIM
DEMOD
CLAMP AC ADD
12dB
B/W
Q001, 021, 022 DTC144WK TIME CONSTANT SW
Q018 2SA1122D BAND REJECTION FILTER
Q008 2SC1623 LOGIC
Q009 DTC144WK LOGIC
Q010 DTC144WK TIME CONSTANT SW
D002 1S2835
D007 1SS123
D003 1SS123
Q013 2SA1122D EQ
Q014 2SA1122D LPE
Q017 DTC144WK
D004 1S2835
VIDEO OUT
AGC
NC
DROP OUT P
COMB OUT Y
GND
VA PB 5V
REG 5V 1
PB Y RF
C SYNC
AGC P
VD
ACK C
CHROMA MUTE
REG 5V 2
S AGC
GND (VIDEO OUT)
VIDEO OUT 1
VIDEO OUT 2
REC Y RF
Signal


7
8
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11
12
13
14
15
16
AGC OUT Y
O.P.IN
PB Y
O.P MIX
NC
VA PB MODE
SP/LP
VI SW P
AC CLIP
IC001
CX20030
Y PROCESS
HPL 1
HPL 2
HPL 3
HHS
MOD
CLAMP
AGC
AGC DET
SW
CLAMP AC ADD
12dB
SYNC SEP
RF AGC
DOC DET
LIM
DEMOD
PB LEVEL
RV001 22k
DEVIATION
RV002 22k
AC CLIP
RV003 4.7k
CARRIER
RV004 22k
Q023 2SC1623 EMPHASIS
Q024 2SA1122D EMPHASIS
D006 1SS123
D005 1S2835
Q001, 021, 022 DTC144WK TIME CONSTANT SW
Q018 2SA1122D BAND REJECTION FILTER
D004 1S2835
Q017 DTC144WK
VIDEO OUT
AGC
RV005 470
RV006 22k
VD
ACK C
CHROMA MUTE
REG 5V 2
S AGC
GND (VIDEO OUT)
VIDEO OUT 1
VIDEO OUT 2
REC Y RF
NC

Note (Schematic Diagram)

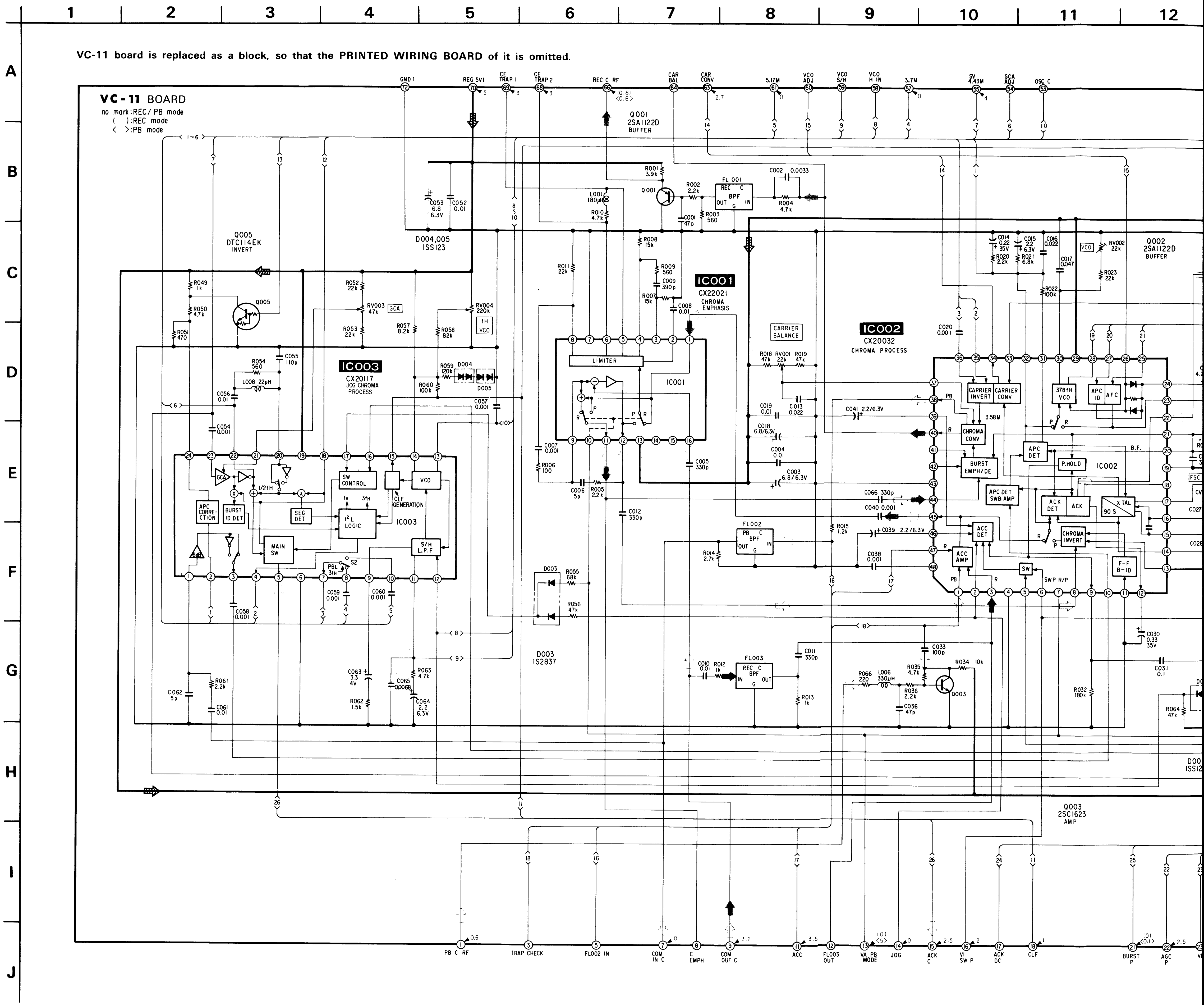
- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors are in μF unless otherwise noted. pF: μμF
  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, chip resistor are 1/10W unless otherwise noted.
  kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- ☐ : panel designation.
- ☐ : adjustment designation.
- ▬ : B+ line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- All voltage are dc measured with a VOM (10MΩ)
- ⇨ indicates the I/O direction of B lines (+, −).

- **Signal path**
  - ➡ :REC Y SIGNAL
  - ⇢ :PB Y SIGNAL
  - ➡ :REC Y & CHROMA SIGNAL
  - ⇨ :PB Y & CHROMA SIGNAL
  - ⇨ :PB CHROMA SIGNAL

Note (Schematic Diagram)

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, chip resistor are 1/10W unless otherwise noted.
  kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- ☐ : panel designation.
- ☐ : adjustment designation.
- ▬ : B+ line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- All voltage are dc measured with a VOM (10MΩ)
- ⇨ indicates the I/O direction of B lines (+, −).

VC-11 (CHROMA SIGNAL PROCESS) SCHEMATIC DIAGRAM



VC-11 board is replaced as a block, so that the PRINTED WIRING BOARD of it is omitted.

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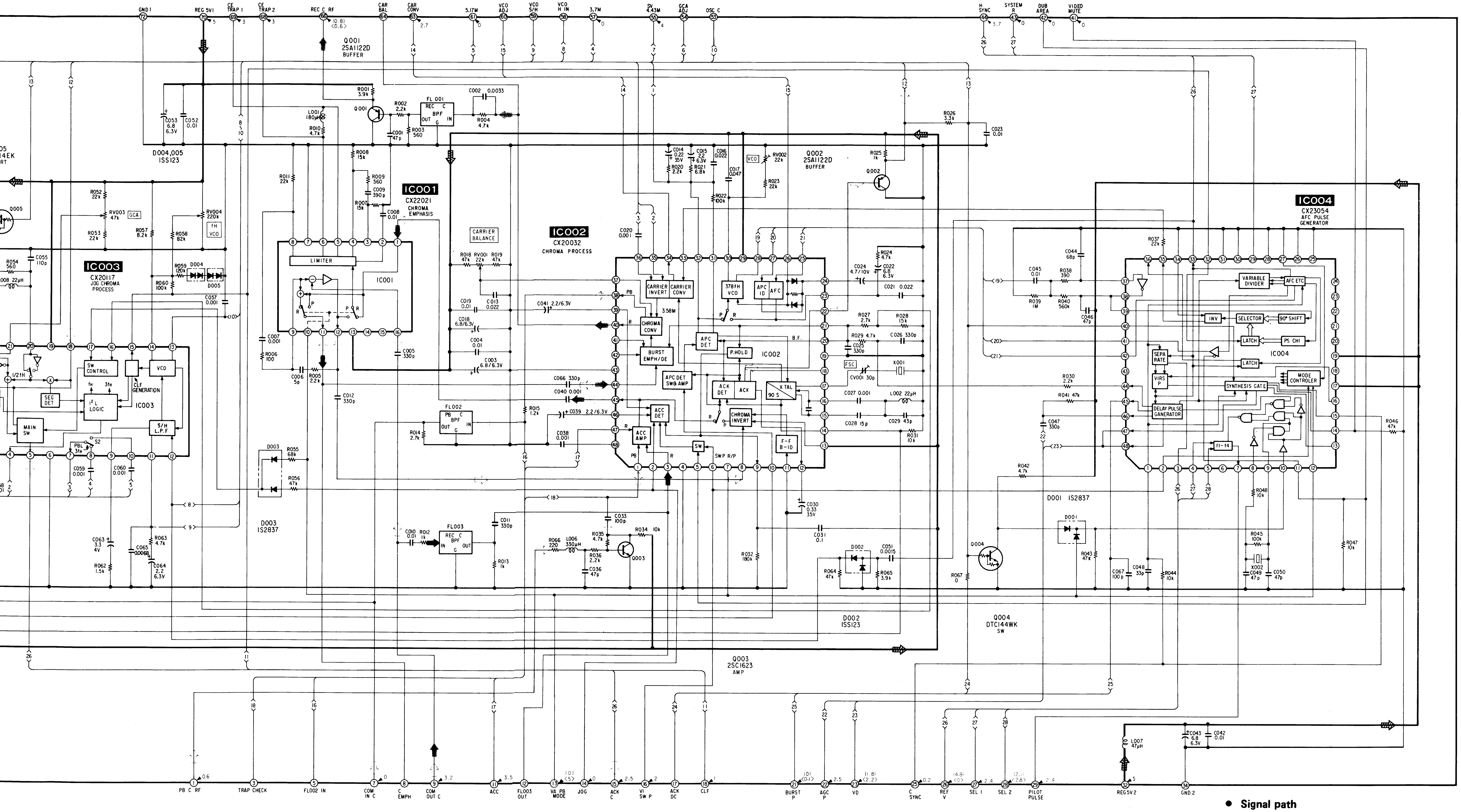
12
A
B
C
D
E
F
G
H
I
J
VC-11 BOARD
no mark:REC/PB mode
( ):REC mode
< >:PB mode
GND I
REG 5V1
CE TRAP 1
CE TRAP 2
REC C RF
CAR BAL
CAR CONV
5.17M
VCO ADJ
VCO S/H
VCO H IN
3.7M
SV 4.43M
GCA ADJ
OSC C
Q001
2SA1122D
BUFFER
Q002
2SA1122D
BUFFER
Q003
2SC1623
AMP
Q005
DTC114EK
INVERT
D004,005
1SS123
D003
1S2837
IC001
CX22021
CHROMA EMPHASIS
IC002
CX20032
CHROMA PROCESS
IC003
CX20117
JOG CHROMA PROCESS
LIMITER
FL001
REC C BPF
FL002
PB C BPF
FL003
REC C BPF
CARRIER BALANCE
CARRIER INVERT
CARRIER CONV
CHROMA CONV
BURST EMPH/DE
APC DET
APC DET SW8 AMP
ACK DET
ACK
P.HOLD
X TAL
CHROMA INVERT
ACC DET
ACC AMP
SW
SWP R/P
F-F B-ID
378fH VCO
APC ID
AFC
3.58M
GCA
APC CORRECTION
BURST ID DET
SEG DET
SW CONTROL
I²L LOGIC
CLF GENERATION
VCO
MAIN SW
S/H L.P.F
PBL 31H
1/2fH
fH
3fH
RV001 22k
RV002 22k
RV003 47k
RV004 220k
fH VCO
PB C RF
TRAP CHECK
FL002 IN
COM IN C
C EMPH
COM OUT C
ACC
FL003 OUT
VA PB MODE
JOG
ACK C
VI SW P
ACK DC
CLF
BURST P
AGC P

ESS) SCHEMATIC DIAGRAM

3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

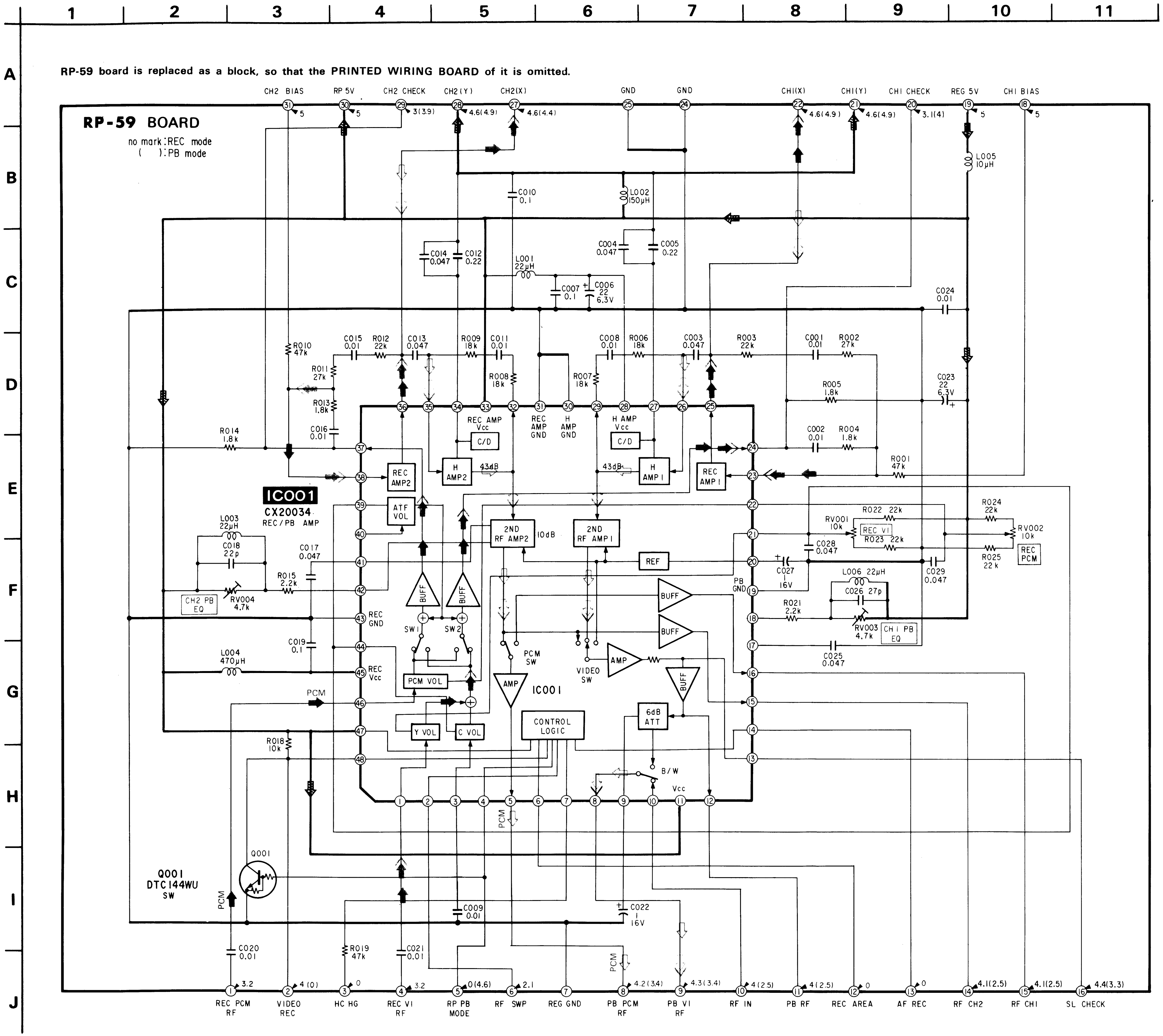
lock, so that the PRINTED WIRING BOARD of it is omitted.



GND1
REG 5V1
CE TRAP 1
CE TRAP 2
REC C RF
CAR BAL
CAR CONV
5.17M
VCO ADJ
VCO S/H
VCO H IN
3.7M
SV 4.43M
GCA ADJ
OSC C
H SYNC
SYSTEM R
DUB AREA
VIDEO MUTE
Q001 2SA1122D BUFFER
FL001 REC C BPF
IC001 CX22021 CHROMA EMPHASIS
LIMITER
CARRIER BALANCE
IC002 CX20032 CHROMA PROCESS
CARRIER INVERT
CARRIER CONV
3.58M
CHROMA CONV
BURST EMPH/DE
APC DET
P.HOLD
APC DET SW& AMP
ACK DET
ACK
X TAL
90 S
CHROMA INVERT
ACC DET
ACC AMP
SW
F-F B-ID
SWP R/P
378fH VCO
APC ID
AFC
Q002 2SA1122D BUFFER
IC003 CX20117 JOG CHROMA PROCESS
SW CONTROL
VCO
I²L LOGIC
SEG DET
MAIN SW
S/H L.P.F
CLF GENERATION
D003 1S2837
D004,005 1SS123
FL002 PB C BPF
FL003 REC C BPF
Q003 2SC1623 AMP
IC004 CX23054 AFC PULSE GENERATOR
VARIABLE DIVIDER
AFC ETC
INV
SELECTOR
90° SHIFT
LATCH
PS CHI
SEPA RATE
VIRS P
SYNTHESIS GATE
MODE CONTROLER
DELAY PULSE GENERATOR
fl-f4
D001 1S2837
D002 1SS123
Q004 DTC144WK SW
L007 47μH
PB C RF
TRAP CHECK
FL002 IN
COM IN C
C EMPH
COM OUT C
ACC
FL003 OUT
VA PB MODE
JOG
ACK C
VI SW P
ACK DC
CLF
BURST P
AGC P
VD
C SYNC
REF V
SEL 1
SEL 2
PILOT PULSE
REG5V2
GND 2

- **Signal path**
- ➡ :REC Y SIGNAL
- ⇨ :PB Y SIGNAL

RP-59 (VIDEO, AUDIO SIGNAL REC/PB PROCESS) SCHEMATIC DIAGRAM



RP-59 board is replaced as a block, so that the **PRINTED WIRING BOARD** of it is omitted.

1 2 3 4 5 6 7 8 9 10 11
A B C D E F G H I J
RP-59 BOARD
no mark : REC mode
( ) : PB mode
CH2 BIAS
RP 5V
CH2 CHECK
CH2 (Y)
CH2 (X)
GND
GND
CH1 (X)
CH1 (Y)
CH1 CHECK
REG 5V
CH1 BIAS
31 5
30 5
29 3(3.9)
28 4.6(4.9)
27 4.6(4.4)
25
24
22 4.6(4.9)
21 4.6(4.9)
20 3.1(4)
19 5
18 5
L005 10μH
L002 150μH
L001 22μH
C010 0.1
C014 0.047
C012 0.22
C004 0.047
C005 0.22
C007 0.1
C006 22 6.3V
C024 0.01
C023 22 6.3V
R010 47k
R011 27k
R013 1.8k
C015 0.01
R012 22k
C013 0.047
R009 18k
C011 0.01
R008 18k
C008 0.01
R006 18k
R007 18k
C003 0.047
R003 22k
C001 0.01
R002 27k
R005 1.8k
C016 0.01
C002 0.01
R004 1.8k
R001 47k
R014 1.8k
IC001
CX20034
REC/PB AMP
REC AMP Vcc
C/D
REC AMP GND
H AMP GND
H AMP Vcc
REC AMP2
H AMP2
43dB
H AMP1
REC AMP1
ATF VOL
2ND RF AMP2
10dB
2ND RF AMP1
REF
L003 22μH
C018 22p
C017 0.047
R015 2.2k
CH2 PB EQ
RV004 4.7k
BUFF
BUFF
SW1
SW2
REC GND
PCM SW
VIDEO SW
AMP
AMP
IC001
PCM VOL
REC Vcc
C019 0.1
L004 470μH
PCM
Y VOL
C VOL
CONTROL LOGIC
6dB ATT
B/W
Vcc
R018 10k
PB GND
RV001 10k
REC V1
R022 22k
R023 22k
C028 0.047
C027 1 16V
C029 0.047
R024 22k
R025 22k
RV002 10k
REC PCM
L006 22μH
C026 27p
R021 2.2k
RV003 4.7k
CH1 PB EQ
C025 0.047
Q001
Q001 DTC144WU SW
C009 0.01
C022 1 16V
C020 0.01
R019 47k
C021 0.01
1 3.2
2 4(0)
3 0
4 3.2
5 0(4.6)
6 2.1
7
8 4.2(3.4)
9 4.3(3.4)
10 4(2.5)
11 4(2.5)
12 0
13 0
14 4.1(2.5)
15 4.1(2.5)
16 4.4(3.3)
REC PCM RF
VIDEO REC
HC HG
REC V1 RF
RP PB MODE
RF SWP
REG GND
PB PCM RF
PB V1 RF
RF IN
PB RF
REC AREA
AF REC
RF CH2
RF CH1
SL CHECK

Note (Schematic Diagram)

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, chip resistor are 1/10W unless otherwise noted.
  kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- ☐ : panel designation.
- ☐ : adjustment designation.
- ▬ : B+ line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- All voltage are dc measured with a VOM (10MΩ)
- ⇨ indicates the I/O direction of B lines (+, −).

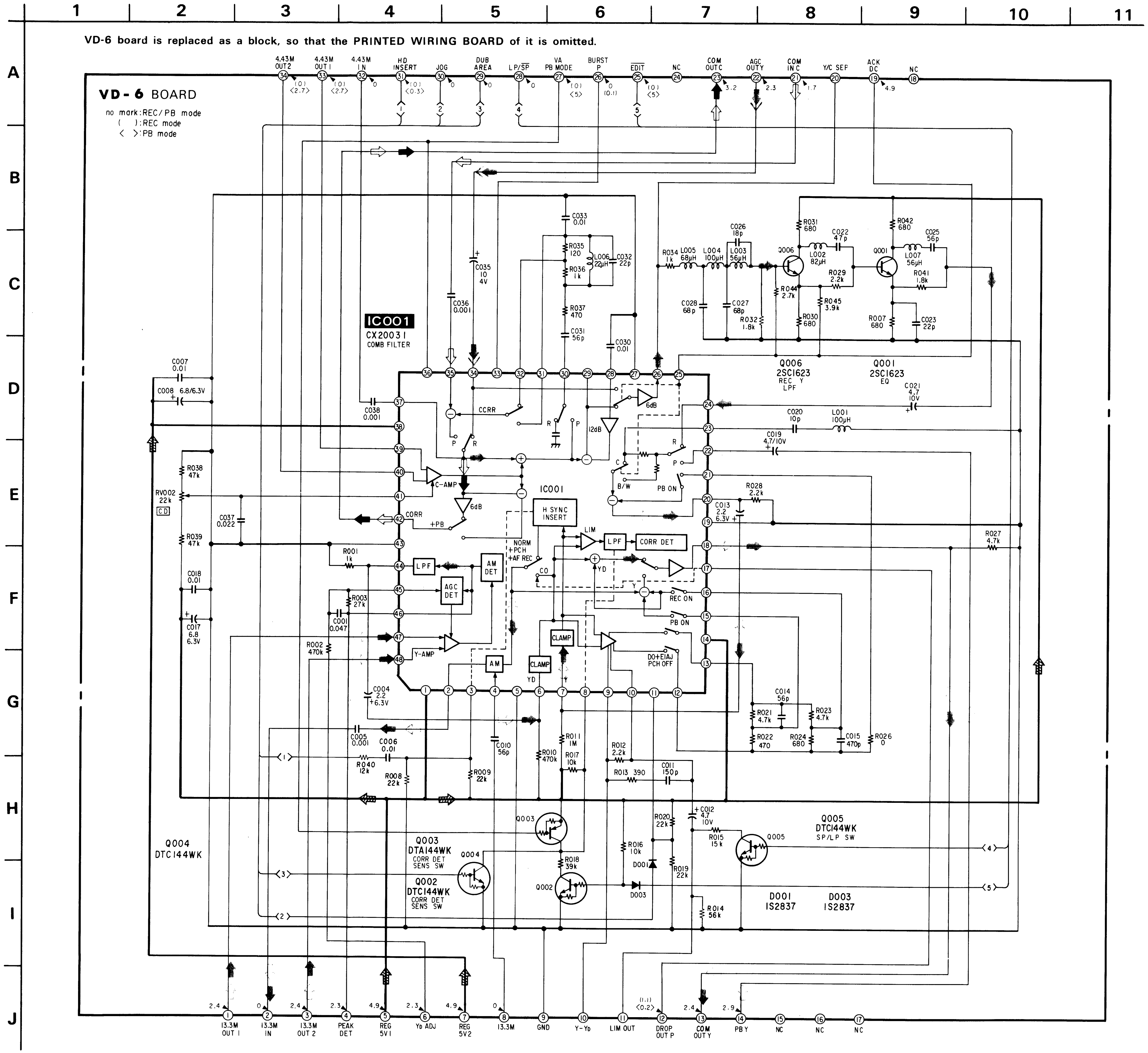
- **Signal path**
  - ➡ :REC Y & CHROMA SIGNAL
  - ⇨ :PB Y & CHROMA SIGNAL
  - ➡ :REC AUDIO SIGNAL
  - ⇨ :PB AUDIO SIGNAL

Note (Schematic Diagram)

- Caution to be exercised when replacing chip components Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors are in μF unless otherwise noted. pF: μμF
  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, chip resistor are 1/10W unless otherwise noted.
  kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- ▭ : panel designation.
- ▭ : adjustment designation.
- ▬ : B+ line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- All voltage are dc measured with a VOM (10MΩ)
- ⇛ indicates the I/O direction of B lines (+, −).

- **Signal path**
  - ⇛ :REC Y & CHROMA SIGNAL
  - ⇛ :REC Y SIGNAL
  - ⇛ :PB Y SIGNAL
  - ➡ :REC CHROMA SIGNAL
  - ⇨ :PB CHROMA SIGNAL

VD-6 (COMB FILTER) SCHEMATIC DIAGRAM



VD-6 board is replaced as a block, so that the PRINTED WIRING BOARD of it is omitted.

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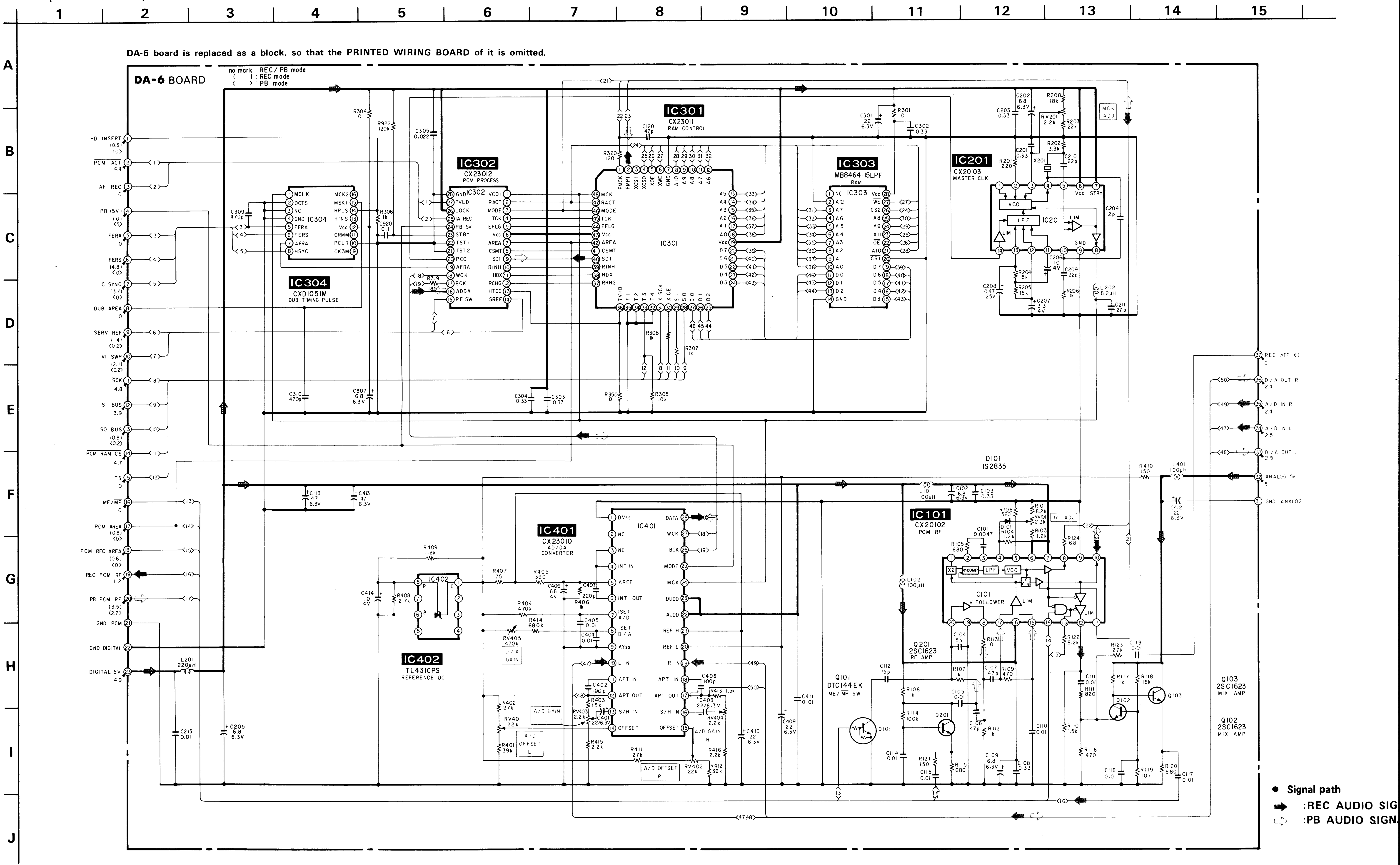
11
A
B
C
D
E
F
G
H
I
J
VD-6 BOARD
no mark:REC/PB mode
( ):REC mode
< >:PB mode
4.43M OUT2
4.43M OUT1
4.43M IN
HD INSERT
JOG
DUB AREA
LP/SP
VA PB MODE
BURST P
EDIT
NC
COM OUT C
AGC OUT Y
COM IN C
Y/C SEF
ACK DC
NC
IC001
CX20031
COMB FILTER
CCRR
C-AMP
6dB
CORR
+PB
12dB
B/W
PB ON
H SYNC INSERT
NORM +PCH +AF REC
LIM
LPF
CORR DET
AM DET
AGC DET
Y-AMP
AM
CLAMP
YD
REC ON
DO+EIAJ PCH OFF
Q006 2SC1623 REC Y LPF
Q001 2SC1623 EQ
Q004 DTC144WK
Q003 DTA144WK CORR DET SENS SW
Q002 DTC144WK CORR DET SENS SW
Q005 DTC144WK SP/LP SW
D001 1S2837
D003 1S2837
RV002 22k
R038 47k
R039 47k
C007 0.01
C008 6.8/6.3V
C037 0.022
C038 0.001
C018 0.01
C017 6.8 6.3V
R001 1k
R003 27k
C001 0.047
R002 470k
C004 2.2 6.3V
C005 0.001
C006 0.01
R040 12k
R008 22k
R009 22k
C010 56p
R010 470k
R011 1M
R017 10k
R012 2.2k
R013 390
C011 150p
C033 0.01
R035 120
R036 1k
L006 22μH
C032 22p
C035 10 4V
C036 0.001
R037 470
C031 56p
C030 0.01
R034 1k
L005 68μH
L004 100μH
L003 56μH
C026 18p
C028 68p
C027 68p
R032 1.8k
R031 680
C022 47p
L002 82μH
R029 2.2k
R044 2.7k
R045 3.9k
R030 680
R042 680
C025 56p
L007 56μH
R041 1.8k
R007 680
C023 22p
C021 4.7 10V
C020 10p
L001 100μH
C019 4.7/10V
R028 2.2k
C013 2.2 6.3V
R027 4.7k
C014 56p
R021 4.7k
R023 4.7k
R022 470
R024 680
C015 470p
R026 0
C012 4.7 10V
R020 22k
R015 15k
R016 10k
R019 22k
R018 39k
R014 56k
13.3M OUT 1
13.3M IN
13.3M OUT 2
PEAK DET
REG 5V1
Yo ADJ
REG 5V2
13.3M
GND
Y-Yb
LIM OUT
DROP OUT P
COM OUT Y
PB Y
NC
NC
NC

DA-6 (PCM PROCESS) SCHEMATIC DIAGRAM

DA-6 board is replaced as a block, so that the PRINTED WIRING BOARD of it is omitted.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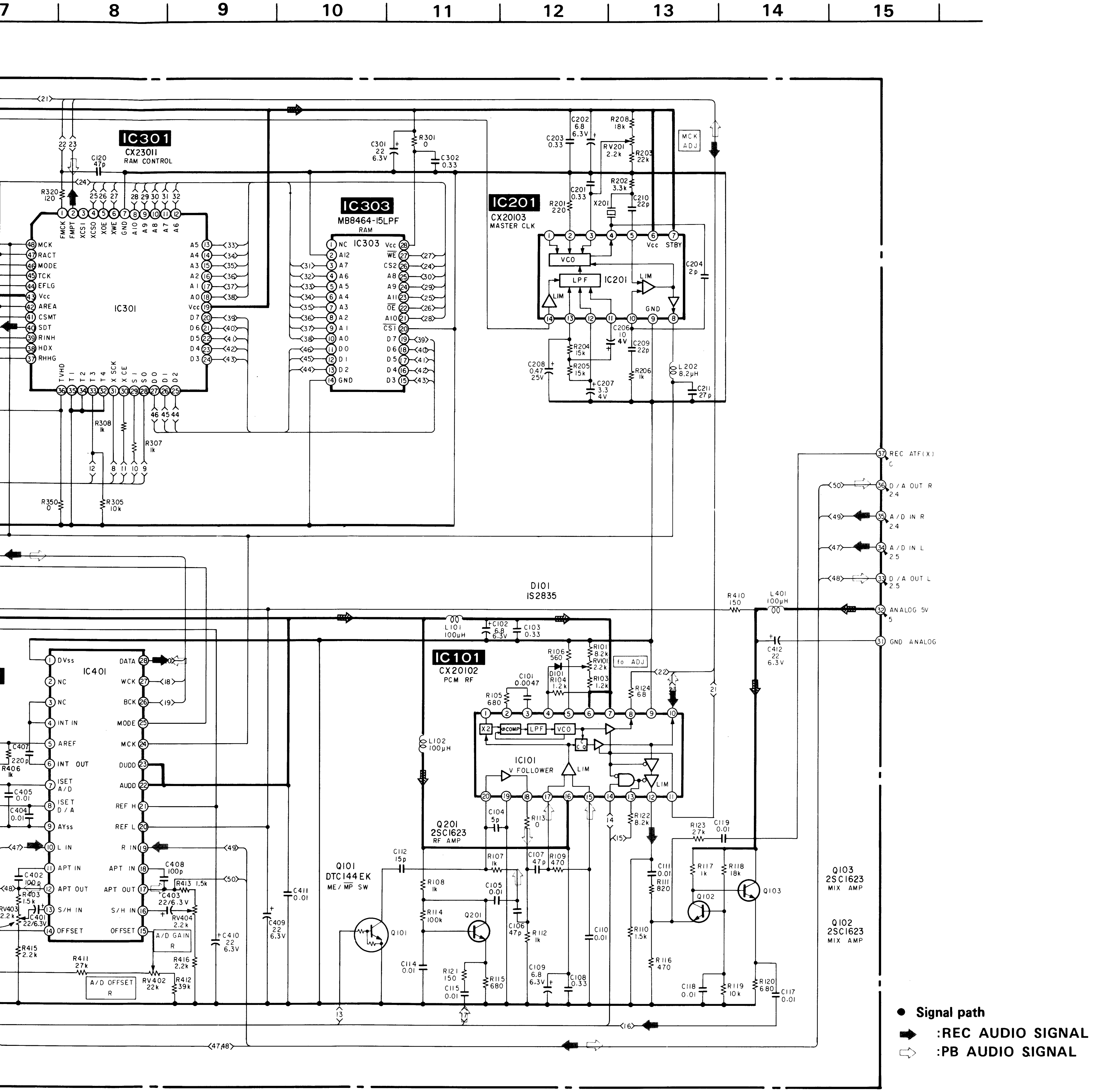
15
A
B
C
D
E
F
G
H
I
J
DA-6 BOARD
no mark : REC/PB mode
( ) : REC mode
< > : PB mode
HD INSERT
PCM ACT
AF REC
PB (5V)
FERA
FERS
C SYNC
DUB AREA
SERV REF
VI SWP
SCK
SI BUS
SO BUS
PCM RAM CS
T3
ME/MP
PCM AREA
PCM REC AREA
REC PCM RF
PB PCM RF
GND PCM
GND DIGITAL
DIGITAL 5V
REC ATF(X)
D/A OUT R
A/D IN R
A/D IN L
D/A OUT L
ANALOG 5V
GND ANALOG
IC301
CX23011
RAM CONTROL
IC302
CX23012
PCM PROCESS
IC303
MB8464-15LPF
RAM
IC304
CXD1051M
DUB TIMING PULSE
IC201
CX20103
MASTER CLK
IC401
CX23010
A/D DA
CONVERTER
IC402
TL431CPS
REFERENCE DC
IC101
CX20102
PCM RF
IC101
V FOLLOWER
Q101
DTC144EK
ME/MP SW
Q201
2SC1623
RF AMP
Q102
2SC1623
MIX AMP
Q103
2SC1623
MIX AMP
D101
1S2835
MCK ADJ
fo ADJ
D/A GAIN
A/D GAIN L
A/D GAIN R
A/D OFFSET L
A/D OFFSET R
L201 220µH
L401 100µH
L101 100µH
L102 100µH
L202 8.2µH
VCO
LPF
LIM
X201

● Signal path

➡ :REC AUDIO SIG

⇨ :PB AUDIO SIGN


7
8
9
10
11
12
13
14
15
IC301
CX23011
RAM CONTROL
IC303
MB8464-15LPF
RAM
IC201
CX20103
MASTER CLK
VCO
LPF
LIM
MCK ADJ
IC401
IC101
CX20102
PCM RF
fo ADJ
V FOLLOWER
D101
1S2835
Q101
DTC144EK
ME/MP SW
Q201
2SC1623
RF AMP
Q102
2SC1623
MIX AMP
Q103
2SC1623
MIX AMP
A/D GAIN R
A/D OFFSET R
REC ATF(X)
D/A OUT R
A/D IN R
A/D IN L
D/A OUT L
ANALOG 5V
GND ANALOG

- **Signal path**
- ➡ :REC AUDIO SIGNAL
- ⇨ :PB AUDIO SIGNAL

Note (Schematic Diagram)

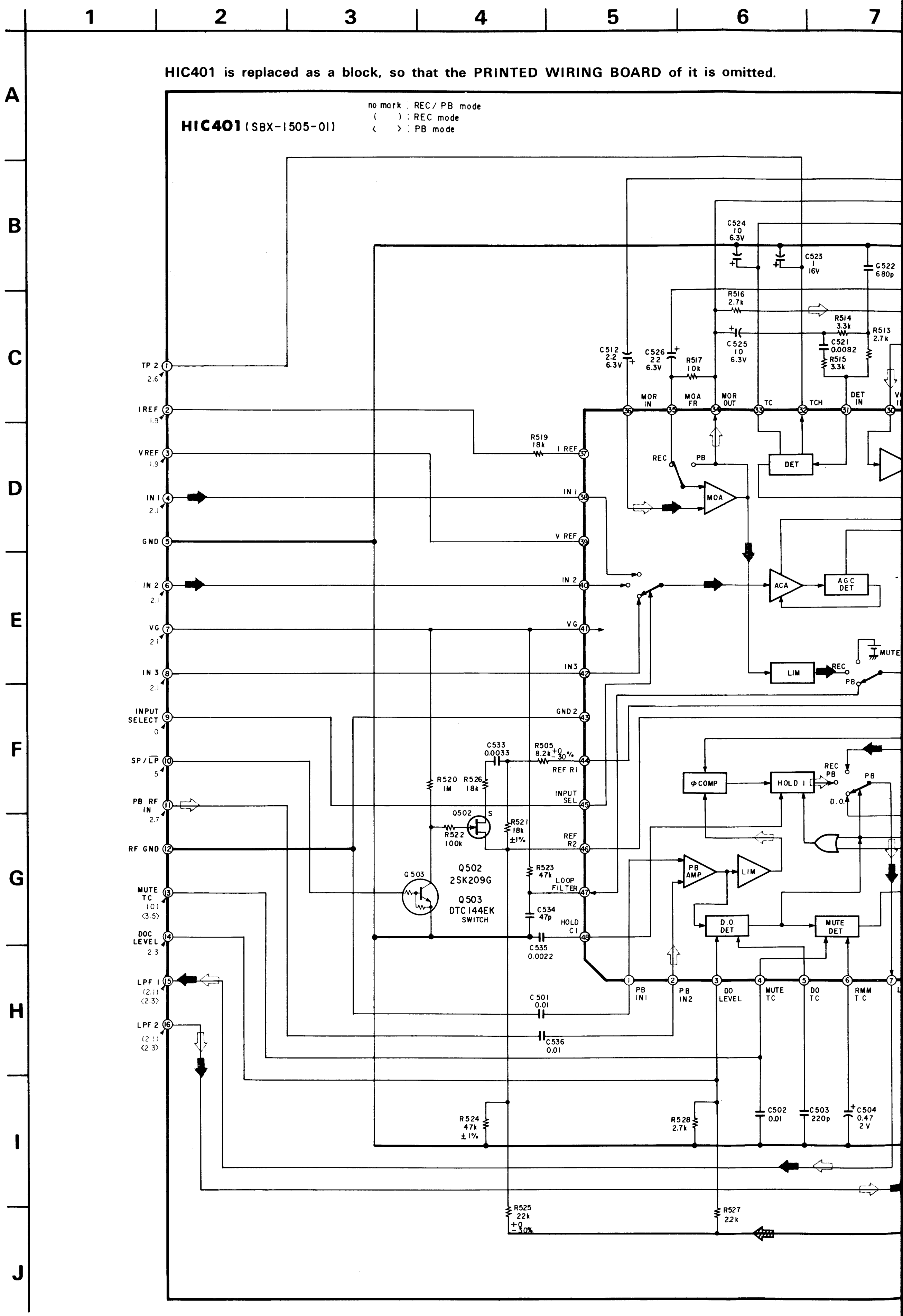
- Caution to be exercised when replacing chip components
  Do not reuse the removed components but use new components.
  Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors are in μF unless otherwise noted. pF: μμF
  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, chip resistor are 1/10W unless otherwise noted.
  kΩ =1000Ω and MΩ =1000kΩ
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- ▭ : panel designation.
- ▭ : adjustment designation.
- ━ : B+ line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- All voltage are dc measured with a VOM (10MΩ)
- ➡ indicates the I/O direction of B lines (+, −).

Note (Schematic Diagram)

- All capacitors are in µF unless otherwise noted. pF: µµF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms.
- All variable and adjustable resistors have characteristics curve B, which definition is omitted.
- ▬ : B+ line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- All voltage are dc measured with a VOM (10MΩ)
- ⇛ indicates the I/O direction of B lines (+, −).

- **Signal path**
  - ➡ :REC AUDIO SIGNAL
  - ⇨ :PB AUDIO SIGNAL

HIC401 SCHEMATIC DIAGRAM



HIC401 is replaced as a block, so that the PRINTED WIRING BOARD of it is omitted.

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A
B
C
D
E
F
G
H
I
J
HIC401 (SBX-1505-01)
no mark : REC/PB mode
( ) : REC mode
< > : PB mode
TP 2 ① 2.6
IREF ② 1.9
VREF ③ 1.9
IN 1 ④ 2.1
GND ⑤
IN 2 ⑥ 2.1
VG ⑦ 2.1
IN 3 ⑧ 2.1
INPUT SELECT ⑨ 0
SP/LP ⑩ 5
PB RF IN ⑪ 2.7
RF GND ⑫
MUTE TC ⑬ (0) <3.5>
DOC LEVEL ⑭ 2.3
LPF 1 ⑮ (2.1) <2.3>
LPF 2 ⑯ (2.1) <2.3>
R519 18k
I REF
IN 1
V REF
IN 2
VG
IN 3
GND 2
REF R1
INPUT SEL
REF R2
LOOP FILTER
HOLD C1
C533 0.0033
R505 8.2k +0 −30%
R520 1M
R526 18k
Q502
R522 100k
R521 18k ±1%
R523 47k
C534 47p
C535 0.0022
Q503
Q502 2SK209G
Q503 DTC144EK SWITCH
C501 0.01
C536 0.01
R524 47k ±1%
R525 22k +0 −30%
R527 22k
R528 2.7k
C502 0.01
C503 220p
C504 0.47 2V
C524 10 6.3V
C523 1 16V
C522 680p
R516 2.7k
R514 3.3k
R513 2.7k
C521 0.0082
R515 3.3k
C525 10 6.3V
C512 2.2 6.3V
C526 2.2 6.3V
R517 10k
MOR IN
MOA FR
MOR OUT
TC
TCH
DET IN
REC
PB
DET
MOA
ACA
AGC DET
LIM
MUTE
ΦCOMP
HOLD 1
REC PB
D.O.
PB AMP
LIM
D.O. DET
MUTE DET
PB IN1
PB IN2
DO LEVEL
MUTE TC
DO TC
RMM TC

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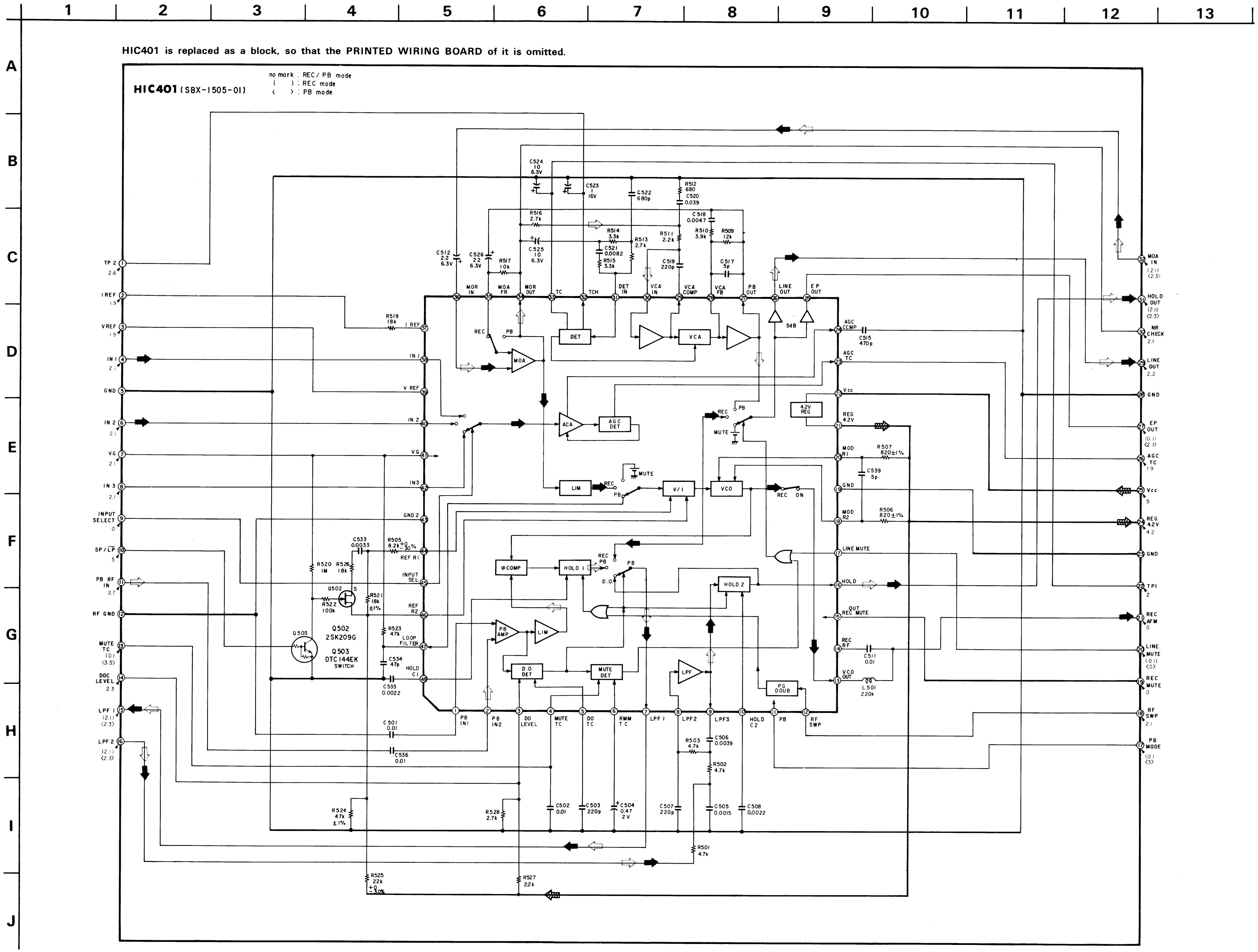
HIC401 SCHEMATIC DIAGRAM

HIC401 is replaced as a block, so that the PRINTED WIRING BOARD of it is omitted.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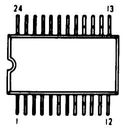
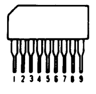
A
B
C
D
E
F
G
H
I
J
HIC401 (SBX-1505-01)
no mark : REC/PB mode
( ) : REC mode
< > : PB mode
TP 2
IREF
VREF
IN 1
GND
IN 2
VG
IN 3
INPUT SELECT
SP/LP
PB RF IN
RF GND
MUTE TC
DOC LEVEL
LPF 1
LPF 2
MOA IN
HOLD OUT
NR CHECK
LINE OUT
GND
EP OUT
AGC TC
Vcc
REG 4.2V
GND
TP1
REC AFM
LINE MUTE
REC MUTE
RF SWP
PB MODE
MOR IN
MOA FR
MOR OUT
TC
TCH
DET IN
VCA IN
VCA COMP
VCA FB
PB OUT
LINE OUT
EP OUT
AGC COMP
AGC TC
Vcc
REG 4.2V
MOD R1
GND
MOD R2
LINE MUTE
HOLD
OUT REC MUTE
REC RF
VCO OUT
I REF
IN 1
V REF
IN 2
VG
IN3
GND 2
REF R1
INPUT SEL
REF R2
LOOP FILTER
HOLD C1
PB IN1
PB IN2
DO LEVEL
MUTE TC
DO TC
RMM TC
LPF 1
LPF2
LPF3
HOLD C2
PB
RF SWP
MOA
DET
VCA
ACA
AGC DET
4.2V REG
LIM
V/I
VCO
ΦCOMP
HOLD 1
HOLD 2
PB AMP
LIM
D.O DET
MUTE DET
LPF
PG DOUB
5dB
REC
PB
MUTE
REC ON
D.O
Q502 2SK209G
Q503 DTC144EK SWITCH
C524 10 6.3V
C523 1 16V
C522 680p
R512 680
C520 0.039
R516 2.7k
C518 0.0047
R514 3.3k
R510 3.9k
R509 12k
C525 10 6.3V
C521 0.0082
R513 2.7k
R511 2.2k
R515 3.3k
C519 220p
C517 5p
C512 2.2 6.3V
C526 22 6.3V
R517 10k
R519 18k
C515 470p
R507 820±1%
C539 5p
R506 820±1%
C533 0.0033
R505 8.2k +0 −30%
R520 1M
R526 18k
R522 100k
R521 18k ±1%
R523 47k
C534 47p
C535 0.0022
C501 0.01
C536 0.01
C511 0.01
L501 220k
R503 4.7k
C506 0.0039
R502 4.7k
R524 47k ±1%
R528 2.7k
C502 0.01
C503 220p
C504 0.47 2V
C507 220p
C505 0.0015
C508 0.0022
R501 4.7k
R525 22k +0 −30%
R527 22k

4-3. SEMICONDUCTORS

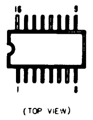
AN2510S
CX20114
CX20117
CX20176
CXA1065M
MSM6411B-26GS-VK
μPD6105G-102
μPD6107G


24
13
1
12
(TOP VIEW)

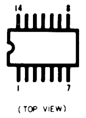
BA6138



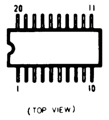
BA6303F
BU4052BF
CX20115A
CX22021
CXA1157M
MC14543BF
MB7114LPF-SNY
TA7733F
μPD4053BG
μPD4538BG
μPD74HC02G
μPD74HC157G
μPD74HC174G


16
9
1
8
(TOP VIEW)

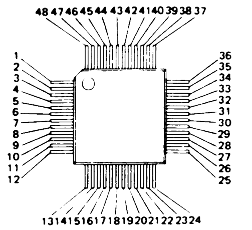
BU4066BF
CX20095A
CX20103
NJM3403AM
μPC324G2
μPC339G2
μPD4066BG
μPD4069UBG


14
8
1
7
(TOP VIEW)

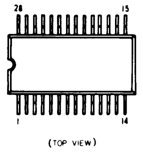
CX-7991
CX20102


20
11
1
10
(TOP VIEW)

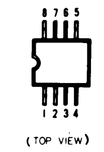
CX20030
CX20031
CX20032
CX20034
CX23011
CX23054
CXA1070Q-Z
CXA1072Q-Z
CXD1035BQW
MB675121UPF


48 47 46 45 44 43 42 41 40 39 38 37
1
2
3
4
5
6
7
8
9
10
11
12
36
35
34
33
32
31
30
29
28
27
26
25
13 14 15 16 17 18 19 20 21 22 23 24

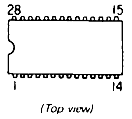
CX20035
CX20036
CX20099
CX23010
CX23012
CXA1042M
CXD1030M


28
15
1
14
(TOP VIEW)

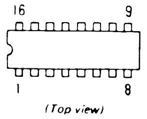
CXB0026AMR
M5201FP
MB3763PF
NJM2904M
NJM3404AM
NJM3414M
NJM4558M
TL062ACPS
TL431CPS
μPC358G2
μPC393G2
μPC4250G2
μPC4572G2


8 7 6 5
1 2 3 4
(TOP VIEW)

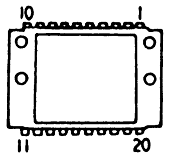
CXD1051M
MB8464-15LPF


28
15
1
14
(Top view)

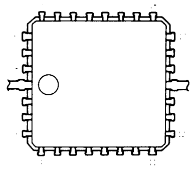
CXD1141M
TL1451ACNS


16
9
1
8
(Top view)

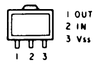
IU024AK-11A



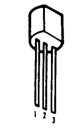
MC146805F2FPSC82533



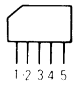
S-8054ALB-LM-S


1 OUT
2 IN
3 Vss
1 2 3

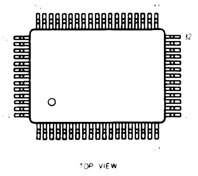
S-81250AG


1 2 3
Pin 1 Ground
2 Input
3 Output

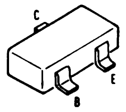
TA7060AP



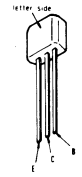
μPD7502G-376-12
μPD7508G-769-00



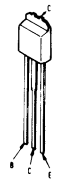
2SA1122
2SA1122C
2SA1462
2SA1602
2SA812
2SB624-BT3
2SB624-BV4
2SC1623
2SC1623-L7
2SC2223-F13
2SC2757
2SC2757-T33
2SC4154
2SD596
DTA114EK
DTA124EK
DTA144EK
DTA144TK
DTA144WK
DTC114EK
DTC124EK
DTC124XK
DTC143TK
DTC144EK
DTC144TK
DTC144WK
NTM2369



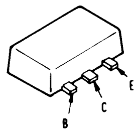
2SA1175
2SA1175-F


letter side
E
C
B

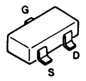
2SA1385



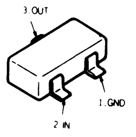
2SB1114-ZL
2SB1114-ZK
2SB1123
2SB804-AW
2SD1005
2SD1615
2SD999



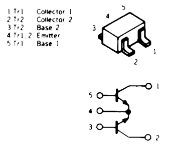
2SK300
2SK94-X2
2SK94-X3



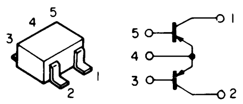
DTA114TU
DTA124EU
DTA144EU
DTC114TU
DTC144EU
DTC144WU


3 OUT
1 GND
2 IN

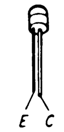
FMA2
FMG2
FMW1
FMW2



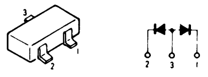
FMS2


4
5
3
1
2
5
4
3
1
2

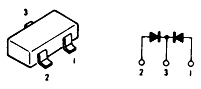
NJL7141E-N



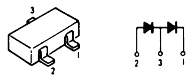
1S2835
MA152WA



1S2837



1SS123



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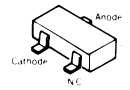
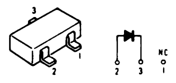
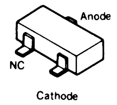
DA204U
DAN202U


Anode
Cathode
N.C.

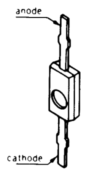
1SS193
E10DS2
E10QS04
RD12M-B2
RD9.1M-B1
SB05-05CP



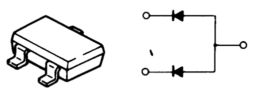
1SS196
DA106U


Anode
NC
Cathode

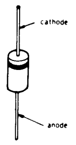
1T32-2


anode
cathode

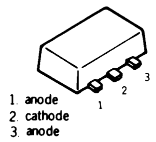
DAP202U



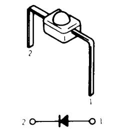
HZ4ALL


cathode
anode

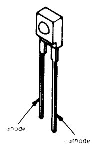
SB01-05CP


2
3
1
1 anode
2 cathode
3 anode

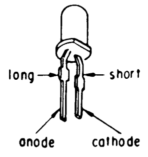
GL-1EG102
GL-1HY



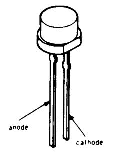
GL-450S


anode
cathode

TLG1244
TLR124


long
short
anode
cathode

TLR147


anode
cathode

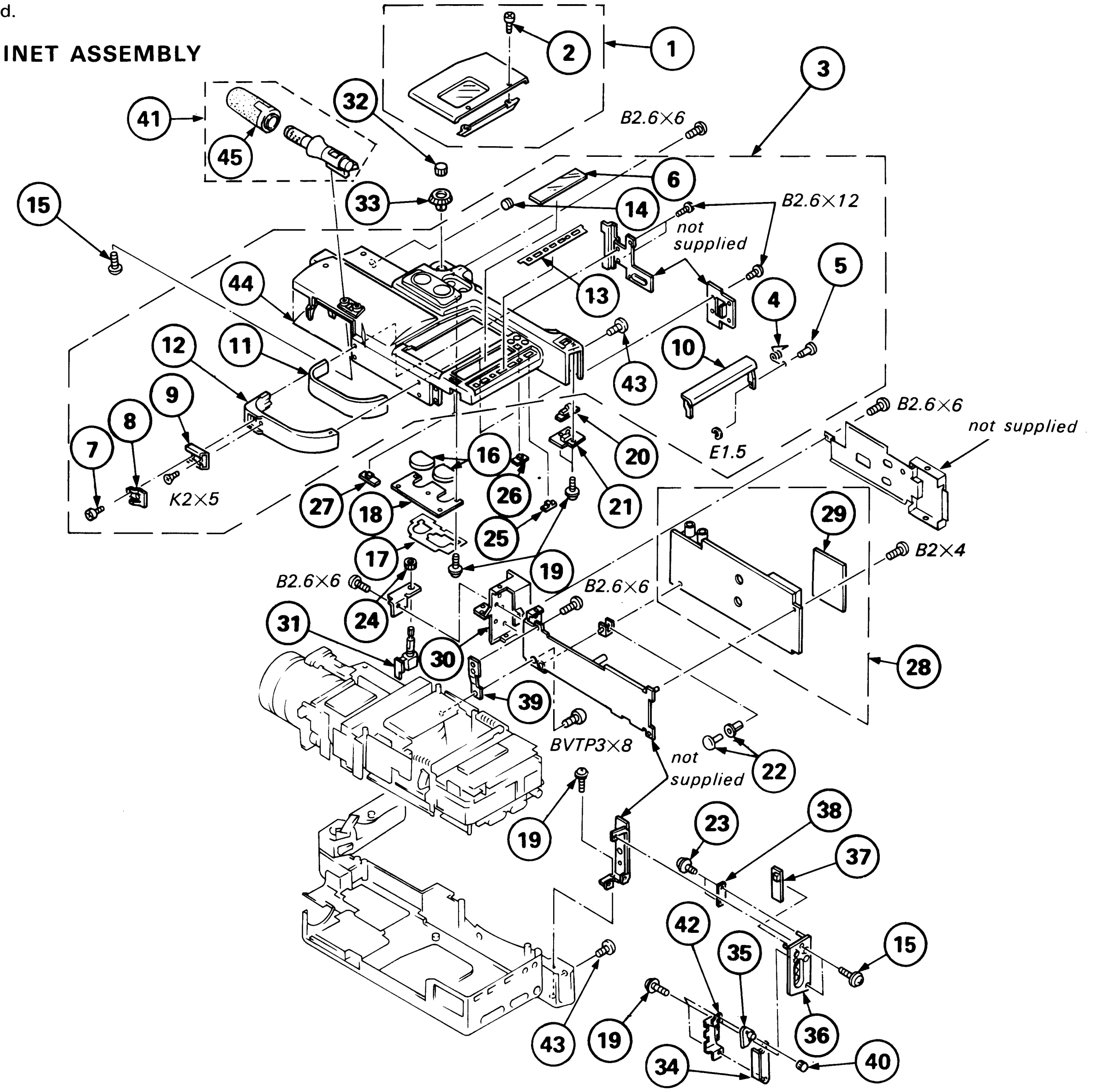
SECTION 5
EXPLODED VIEWS

NOTE:

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- −XX, −X mean standardized parts, so they may have some differences from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

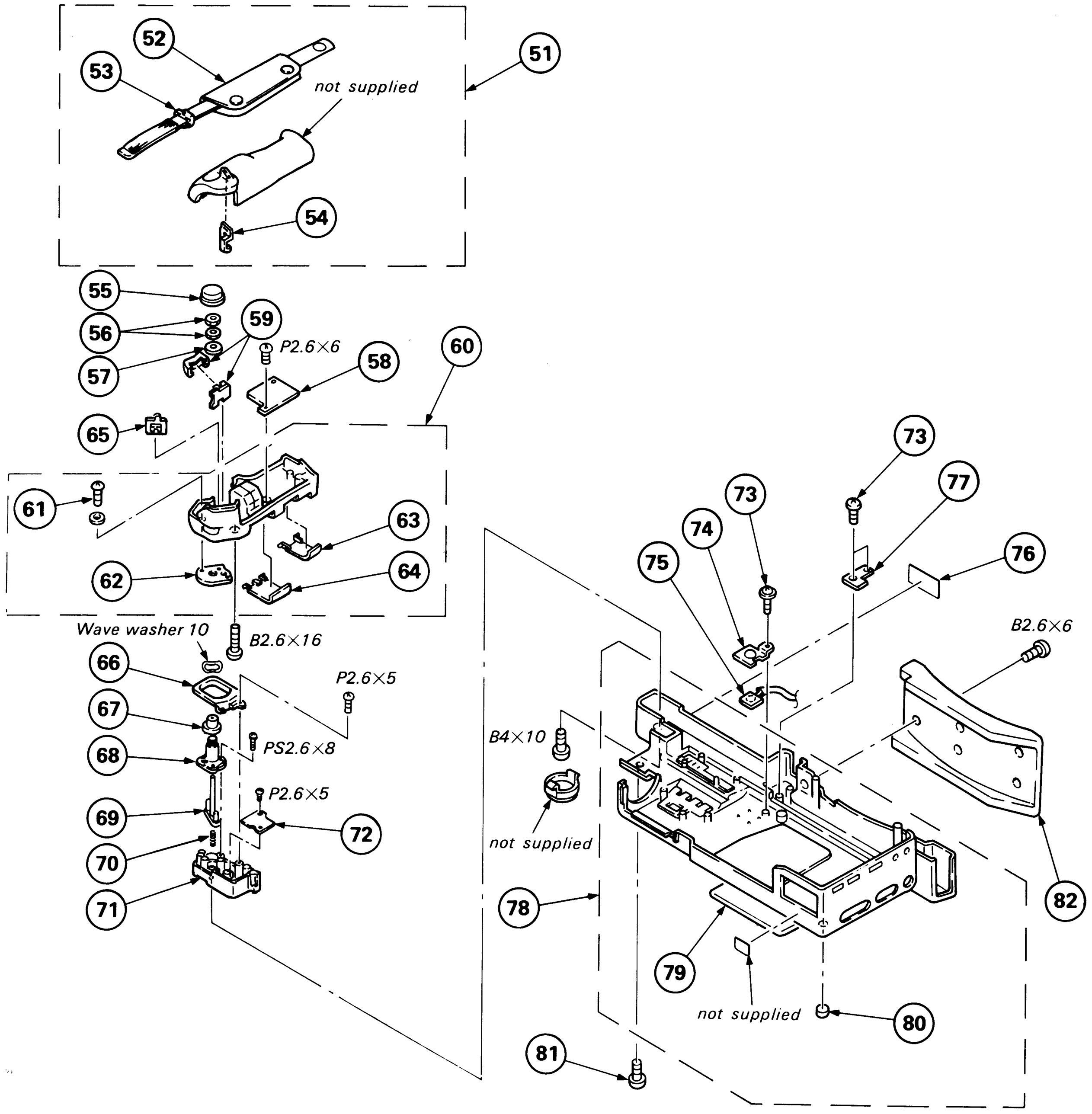
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

5-1. CABINET ASSEMBLY



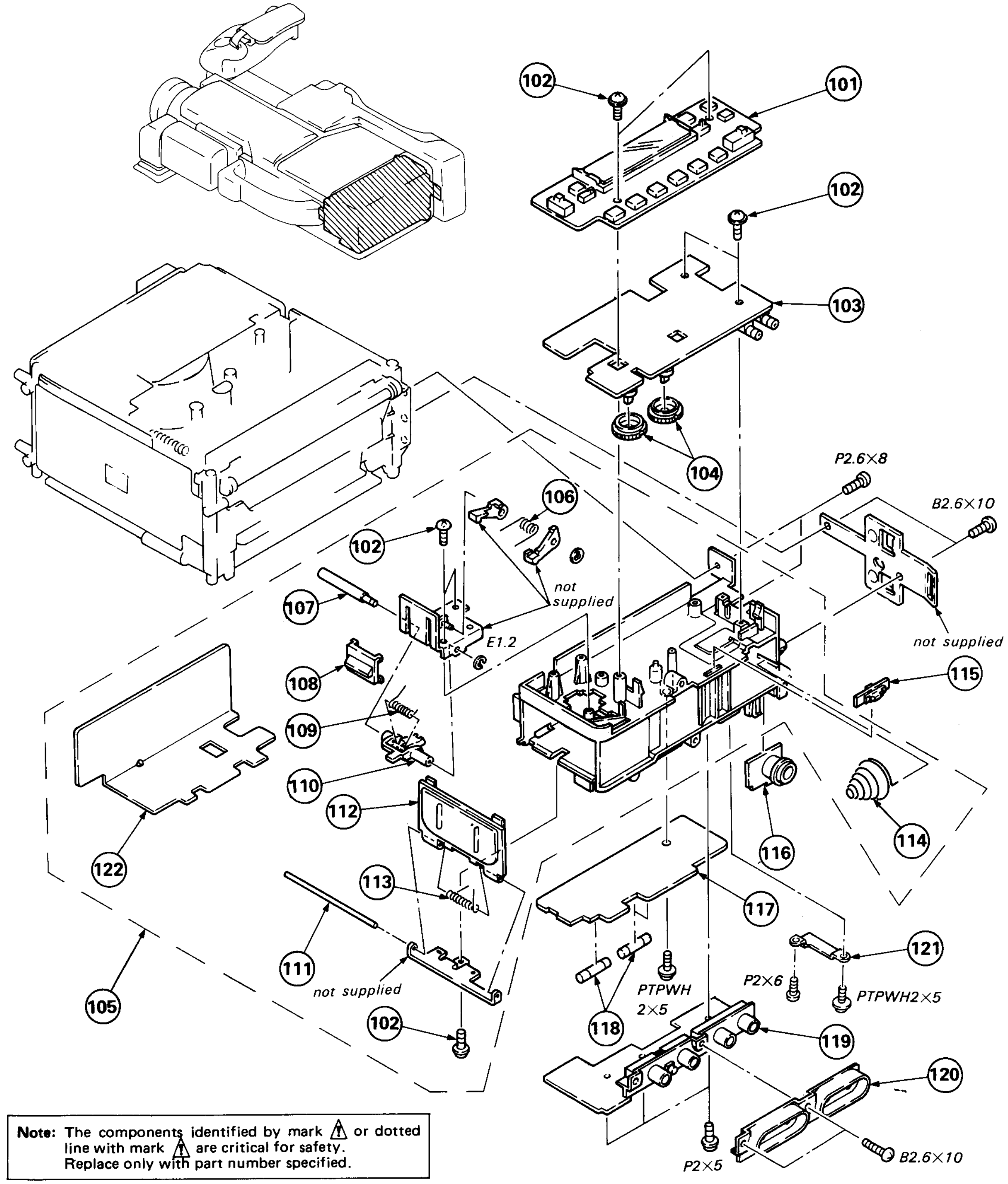
No.	Part No.	Description	Remark
1	X-3713-955-1	LID ASSY, CASSETTE	2
2	3-712-679-21	SCREW (2X5), TAPPING	
3	X-3713-956-1	CABINET (L) ASSY	4-14, 44
4	3-720-557-01	SPRING (F)	
5	3-720-560-01	SHAFT, SPRING	
6	3-721-791-11	WINDOW, INDICATION	
7	3-678-103-31	SCREW, EVF STOPPER	
8	3-688-940-01	SPRING, LEAF	
9	3-688-985-01	SHOE, ACCESSORY	
10	3-720-582-01	DOOR, FUNCTION	
11	3-720-597-01	HANDLE (LOWER)	
12	3-720-598-01	HANDLE (UPPER)	
13	3-721-732-01	PLATE, INDICATION	
14	3-721-751-01	CAP	
15	3-725-329-11	SCREW (2.6X6)	
16	1-520-499-11	METER, LEVEL	
17	*A-7070-672-A	ME-5 BOARD, COMPLETE	
18	*3-720-592-01	RETAINER, METER	
19	3-669-480-21	+ PTPWH 2	
20	3-720-546-01	KNOB, AUDIO DOWEL	
21	*A-7070-668-A	DL-22 BOARD, COMPLETE	
22	2-279-715-11	RIVET, NYLON	
23	3-669-480-11	+ PTPWH 2	
24	3-721-785-01	SCREW (M9), HEXAGON, SPECIAL	
25	3-713-540-01	KNOB, REC	
26	3-713-538-01	KNOB, EDIT	
27	3-713-539-01	KNOB, EJECT	
28	*A-7061-121-A	PC-32 BOARD, COMPLETE	29
29	*A-7061-122-A	DA-6 BOARD, COMPLETE	
30	*3-720-593-01	TABEL, TRIPOD	
31	*A-7070-657-A	VR-17 BOARD, COMPLETE	
32	3-720-545-01	KNOB, VOLUME (RIGHT)	
33	3-720-544-01	KNOB, VOLUME (LEFT)	
34	*A-7070-660-A	PJ-19 BOARD, COMPLETE	
35	*A-7070-659-A	PV-3 BOARD, COMPLETE	
36	3-720-594-01	CABINET (REAR)	
37	*A-7070-661-A	HJ-4 BOARD, COMPLETE	
38	*3-721-756-01	RETAINER, HJ	
39	*3-721-750-01	BRACKET	
40	3-720-543-01	KNOB, HEADPHONE	
41	1-542-096-11	MICROPHONE (STEREO)	45
42	*3-721-795-01	REINFORCEMENT	
43	3-725-329-01	SCREW (2.6X4)	
44	*3-725-319-01	SPACER, PC BOARD	
45	X-2536-711-1	SCREEN ASSY, WINDOW	

5-2. CABINET (R), GRIP ASSEMBLIES



No.	Part No.	Description	Remark
51	X-3713-951-1	CABINET (LEFT) ASSY, GRIP	52-54
52	3-712-621-11	BELT, GRIP	
53	3-714-007-01	CLAMP, HOOD	
54	3-720-566-01	HOOK (G), BELT	
55	3-720-558-01	BUTTON, RELEASE	
56	3-712-653-01	NUT (M8), TUBE	
57	3-712-650-01	COLLAR	
58	*A-7070-598-A	LI-7 BOARD, COMPLETE	
59	1-571-373-11	SWITCH, PUSH (ZOOM)	
60	X-3713-950-1	CABINET (RIGHT) ASSY, GRIP	61-64
61	3-686-999-01	SCREW (2.6X4) (C LOCK), (+) B	
62	3-721-775-01	RATCHET	
63	3-720-562-01	LID, BATTERY CASE	
64	3-720-568-01	LID, EARPHONE	
65	*A-7070-599-A	GS-4 BOARD, COMPLETE	
66	3-720-576-01	PLATE, ORNAMENTAL, CABINET (R)	
67	3-721-774-01	ATTACHMENT (G)	
68	X-3686-879-1	HOLDER ASSY, RATCHET	
69	X-3686-858-3	RETAINER ASSY, RATCHET	
70	3-534-235-00	SPRING, COMPRESSION	
71	*3-712-602-01	REINFORCEMENT, CABINET (L)	
72	*A-7070-597-A	ZS-3 BOARD, COMPLETE	
73	3-669-480-21	+ PTPWH 2	
74	*3-721-714-01	SHEET METAL, N MICROPHONE	
75	1-542-097-11	MICROPHONE UNIT	
76	*3-725-354-01	LABEL, MODEL NUMBER (UK MODEL/ EXCEPTION OF FTZ IN AEP MODEL)	
	*3-721-797-01	LABEL, MODEL NUMBER (OBJECT OF FTZ IN AEP MODEL)	
77	*A-7070-667-A	MS-11 BOARD, COMPLETE	
78	X-3713-961-1	CABINET (R) ASSY	79, 80
79	*3-721-753-01	PAT	
80	3-688-931-11	FOOT, RUBBER	
81	3-713-790-01	SCREW (M2X6), TAPPING, P3	
82	3-721-703-01	PAT, SHOULDER	
83	*3-704-235-01	LABEL, CAUTION (UK MODEL)	

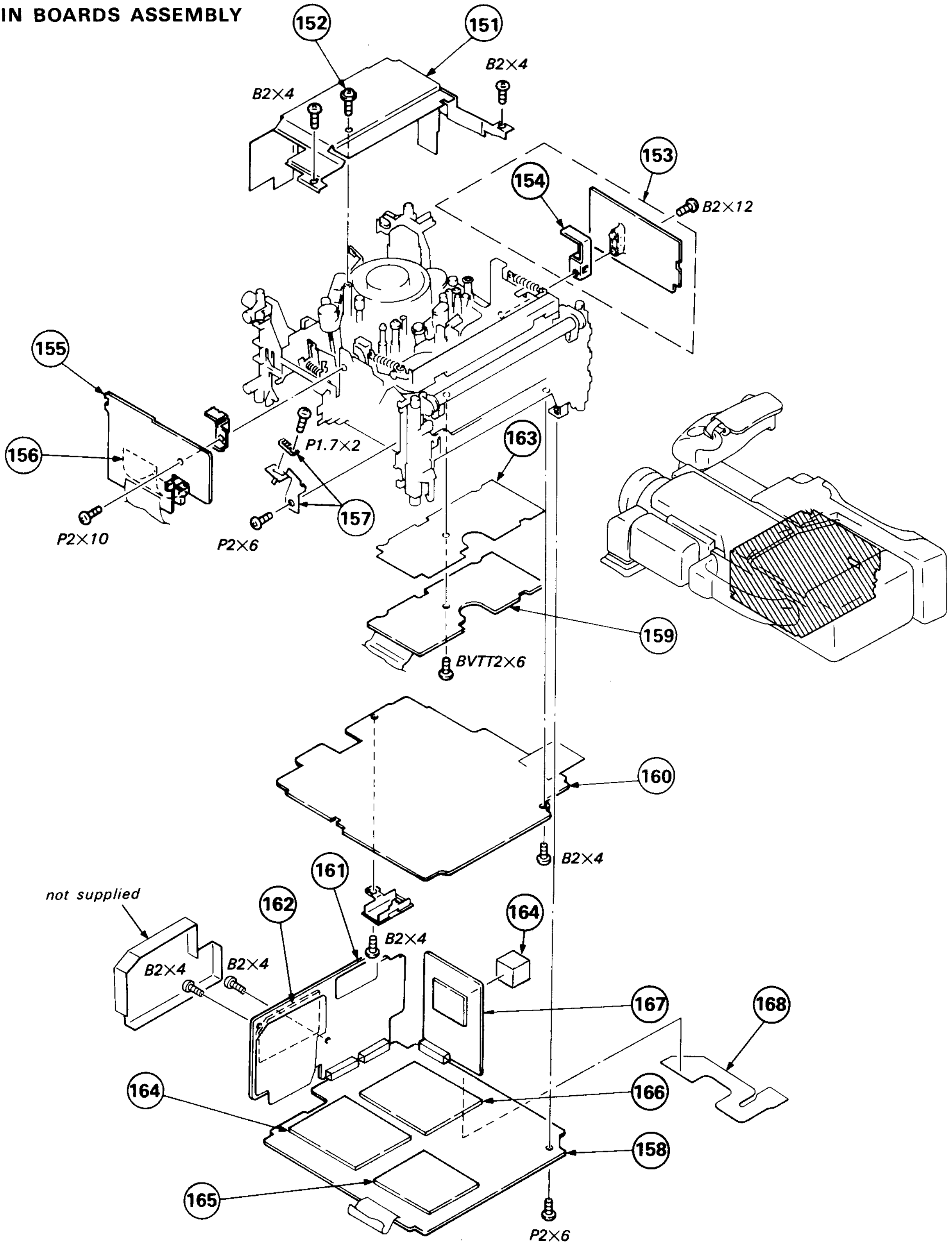
5-3. BATTERY HOLDER ASSEMBLY


102
101
102
103
104
P2.6×8
B2.6×10
106
102
not supplied
107
E1.2
not supplied
115
108
109
110
112
116
114
122
113
117
121
111
not supplied
PTPWH
2×5
P2×6
PTPWH2×5
105
102
118
119
120
P2×5
B2.6×10

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

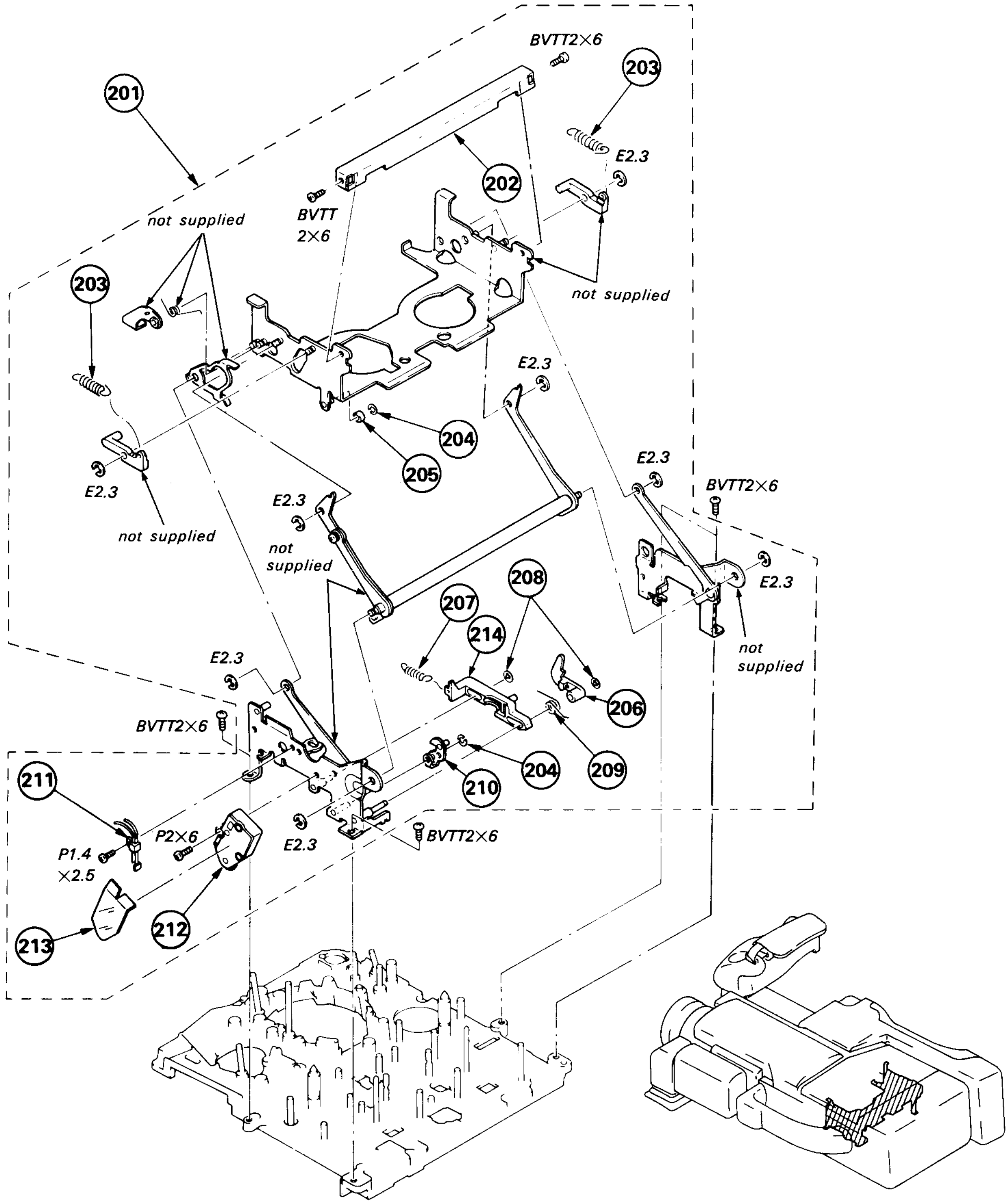
No.	Part No.	Description	Remark
101	*A-7061-119-A	SK-22 BOARD, COMPLETE	
102	3-669-480-21	+ PTPWH 2	
103	*A-7061-120-A	CC-13 BOARD, COMPLETE	
104	3-720-555-01	KNOB, V	
105	X-3713-920-1	HOLDER ASSY, BATTERY	106-114, 122
106	3-713-704-01	SPRING, TORSION	
107	3-691-999-01	SHAFT, BATTERY LOCK	
108	3-720-564-01	KNOB, RELEASE	
109	3-713-520-01	SPRING	
110	3-720-581-01	LOCK, BATTERY	
111	*3-720-536-01	SHAFT, LID	
112	3-721-737-01	LID, BATTERY	
113	3-720-537-01	SPRING, TORSION	
114	3-686-775-01	SPRING	
115	3-720-535-01	BUTTON, AU SELECTION	
116	*A-7070-655-A	RJ-3 BOARD, COMPLETE	
117	*A-7070-656-A	FU-62 BOARD, COMPLETE	
118	⚠1-532-285-00	FUSE, TIME-LAG	
119	*A-7070-654-A	SC-9 BOARD, COMPLETE	
120	3-720-596-01	PLATE, JACK, P	
121	*3-712-611-01	PLATE, GROUND, L	
122	*3-721-738-01	PLATE, SHIELD, BATTERY	

5-4. MAIN BOARDS ASSEMBLY


152
151
B2×4
B2×4
153
154
B2×12
155
156
P1.7×2
163
157
P2×10
P2×6
159
BVTT2×6
160
B2×4
not supplied
161
162
164
B2×4
B2×4
B2×4
167
168
164
166
158
165
P2×6

No.	Part No.	Description	Remark
151	*3-712-529-01	PLATE, SHIELD, MD	
152	3-703-502-31	SCREW	
153	*A-7061-118-A	TS-80 BOARD, COMPLETE	154
154	*X-3686-836-1	HOLDER ASSY, TOP	
155	*A-7070-653-A	DR-45 BOARD, COMPLETE	156
156	A-7070-249-A	FP-20 BOARD, COMPLETE	
157	1-807-744-11	SENSOR (DEW)	
158	*A-7061-114-A	VI-48 BOARD, COMPLETE	164-166
159	*A-7060-343-A	RS-18 BOARD, COMPLETE	
160	*A-7061-117-A	SS-83 BOARD, COMPLETE	
161	*A-7061-116-A	RP-66 BOARD, COMPLETE	162
162	A-7068-106-A	RP-59 BOARD, COMPLETE (HIC)	
163	3-712-411-01	INSULATOR, RS	
164	A-7068-123-A	VY-9 BOARD, COMPLETE (HIC)	
165	A-7068-124-A	VD-6 BOARD, COMPLETE (HIC)	
166	A-7068-125-A	VC-11 BOARD, COMPLETE (HIC)	
167	*A-7061-115-A	AU-48 BOARD, COMPLETE	
168	1-626-234-11	FP-107 FLEXIBLE BOARD	
169	3-725-319-01	SPACER, PC BOARD	

5-5. CASSETTE COMPARTMENT ASSEMBLY


201
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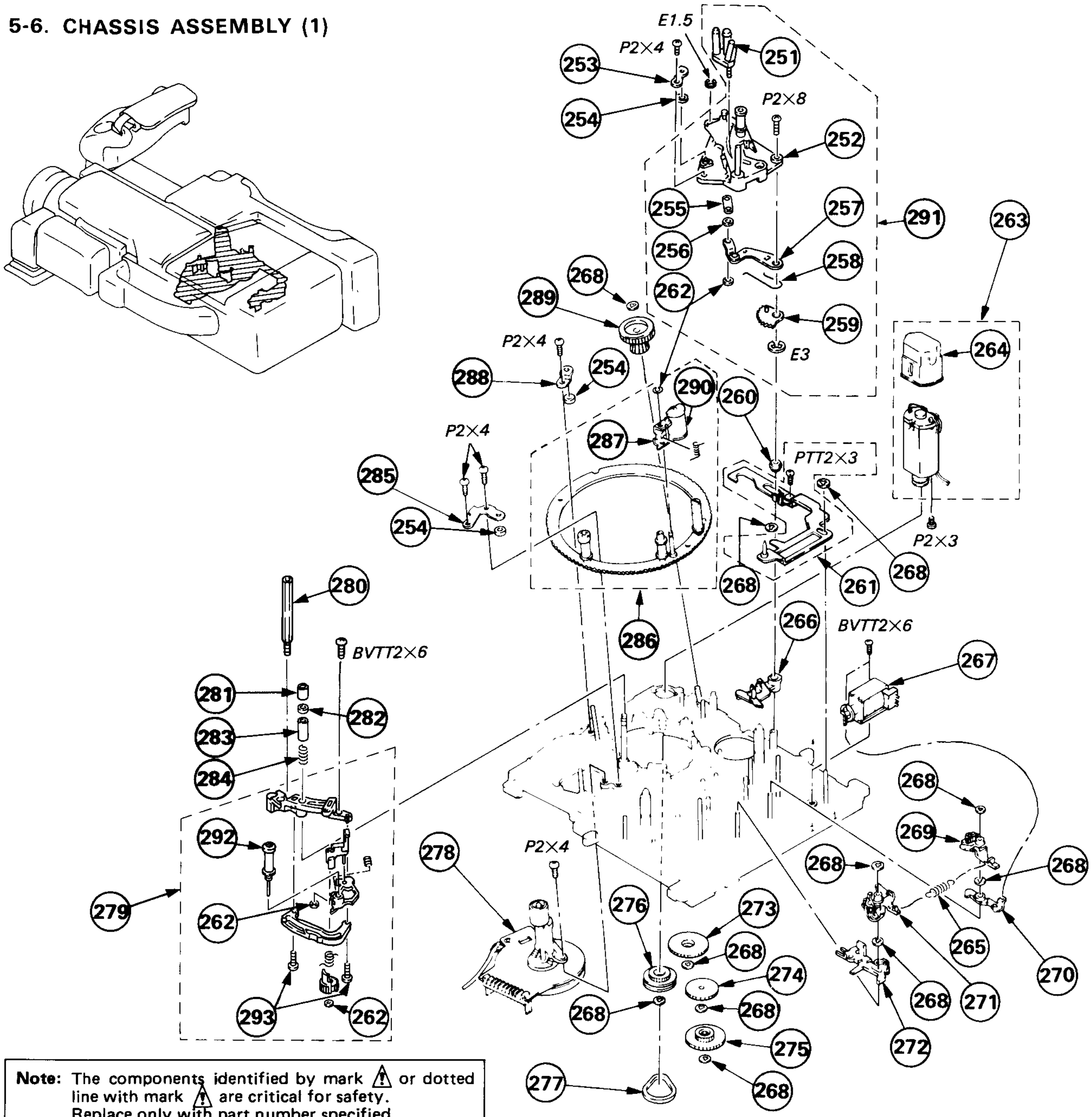
214
BVTT2×6
BVTT 2×6
E2.3
not supplied
P1.4 ×2.5
P2×6

No.	Part No.	Description	Remark
201	A-7040-005-A	CASSETTE COMPARTMENT ASSY	202-214
202	3-686-718-01	REINFORCEMENT	
203	3-686-883-01	SPRING, TENSION	
204	3-578-265-11	WASHER, STOPPER	
205	*3-686-693-01	ROLLER, LOCK	
206	3-686-692-01	PREVENTION, SLIDER	
207	3-696-047-01	SPRING, TENSION	
208	3-669-465-00	WASHER (1.5), STOPPER	
209	3-686-694-01	SPRING, TORSION	
210	*X-3686-541-1	CLAW ASSY, LOCK	
211	1-553-226-00	SWITCH, LEAF (CASSETTE LOCK) (S901)	
212	*3-681-528-00	DAMPER	
213	*3-686-937-01	INSULATOR, DAMPER	
214	3-686-763-01	SLIDER, LOCK	

5-6. CHASSIS ASSEMBLY (1)



E1.5
P2×4
251
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254
P2×8
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255
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291
263
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E3
P2×4
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287
P2×4
PTT2×3
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268
P2×3
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BVTT2×6
BVTT2×6
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P2×4
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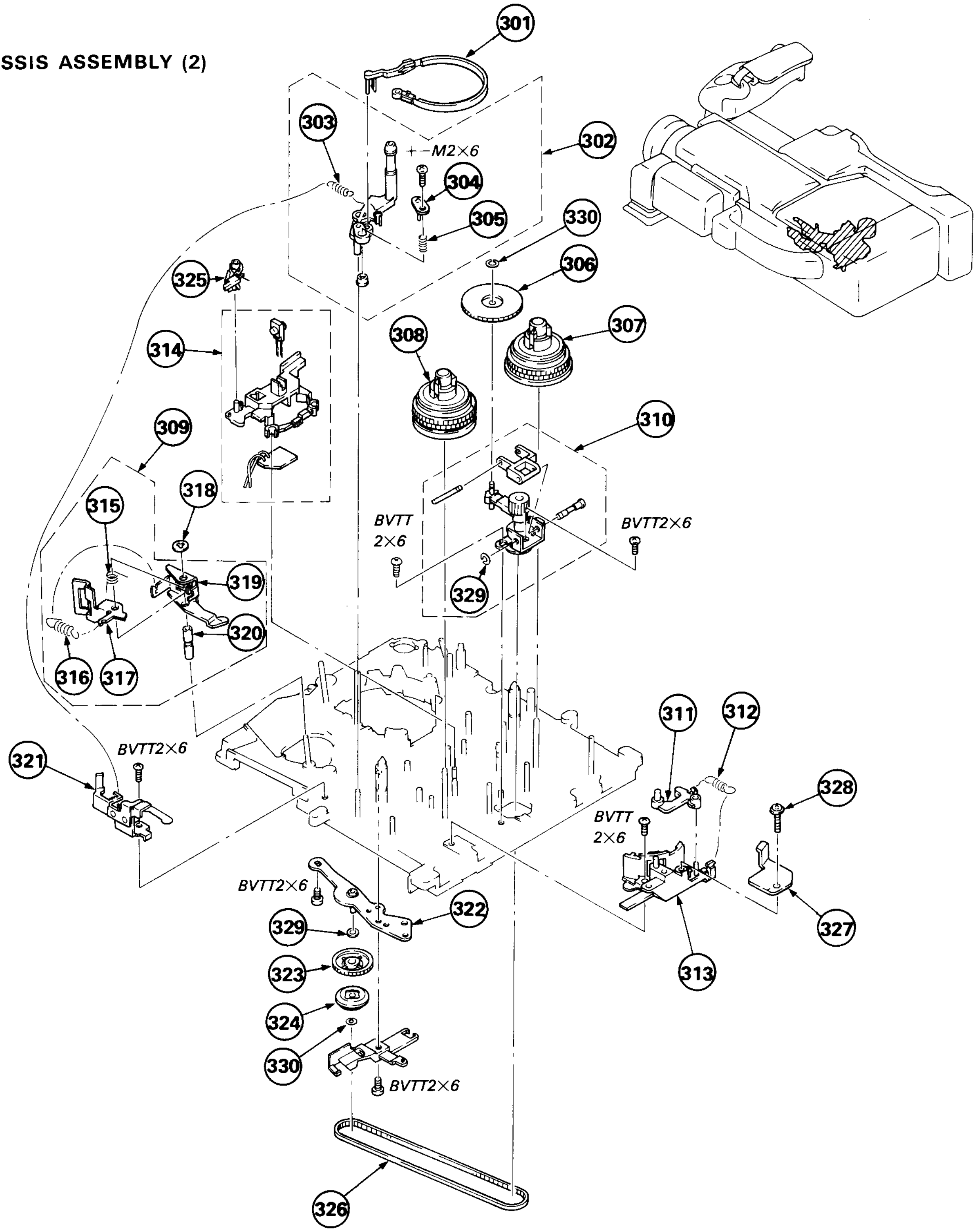
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remark
251	A-7040-001-A	BASE ASSY, GUIDE	
252	A-704-000-1A	CHASSIS ASSY, GUIDE, SLANT	
253	*3-686-503-01	RETAINER, ROLLER	
254	3-697-538-01	ROLLER, RING	
255	3-686-663-01	WASHER, STOPPER, 2 GANG	
256	3-701-436-21	WASHER, POLYEHTHYLENE	
257	A-7040-001-A	ARM ASSY	
258	3-686-701-01	SPRING	
259	3-699-509-01	GEAR, SECTOR	
260	3-686-537-01	RETAINER, LOCK SLODER	
261	A-7040-072-A	SLIDER ASSY, LOCK	
262	3-315-384-31	WASHER, STOPPER	
263	A-7040-031-A	MOTOR ASSY, L (LOADING) (M901)	264
264	*3-686-757-01	CAP, SHIELD, L MOTOR	
265	3-686-882-01	SPRING, TENSION	
266	*3-686-636-04	ARM, T.S RELEASE	
267	⚠ 1-454-377-21	SOLENOID, PLUNGER	
268	3-669-465-00	WASHER (1.5), STOPPER	
269	X-3686-574-1	BRAKE ASSY, MAIN, TAKE-UP	
270	*3-686-635-01	ARM, P	
271	X-3711-991-1	BRAKE ASSY, S MAIN	
272	*3-686-629-01	SLIDER, SELECTION, UPPER & LOWER	
273	3-686-508-01	GEAR, NO.2	
274	3-686-545-01	GEAR, NO.3	
275	3-686-544-01	GEAR, NO.4	
276	X-3686-514-1	GEAR ASSY, NO.1	
277	3-686-546-01	BELT, L- MOTOR	
278	8-835-196-01	MOTOR, DC BHF-2802A (CAPSTAN) (M902)	
279	A-7040-054-A	GUIDE (P) ASSY, ENTRANCE	262, 292, 293
280	3-686-561-01	SCREW, DRUM GUARD	
281	3-686-724-01	NUT, GUIDE	
282	*3-686-894-01	FLANGE, #3 #4 GUIDE	
283	3-686-912-01	GUIDE, #3 #4	
284	3-699-609-01	SPRING, COMPRESSION	
285	*3-686-675-01	STOPPER, RING	
286	A-7040-067-A	RING ASSY, THREADING	262, 287, 290
287	X-3686-893-1	ARM ASSY, PINCH ROLLER	290
288	*3-686-911-01	PLATE, TOP, ROLLER	
289	3-697-518-01	GEAR, NO.10	
290	X-3686-892-1	PINCH ROLLER ASSY	
291	A-7040-001-A	GUIDE BLOCK ASSY, SLANT	251, 252, 255-259, 262
292	X-3686-676-1	GUIDE ASSY, #2	
293	3-316-938-31	SCREW (B1.4X4), TAPPING	

5-7. CHASSIS ASSEMBLY (2)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BVTT
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BVTT2×6
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320
316
317
311
312
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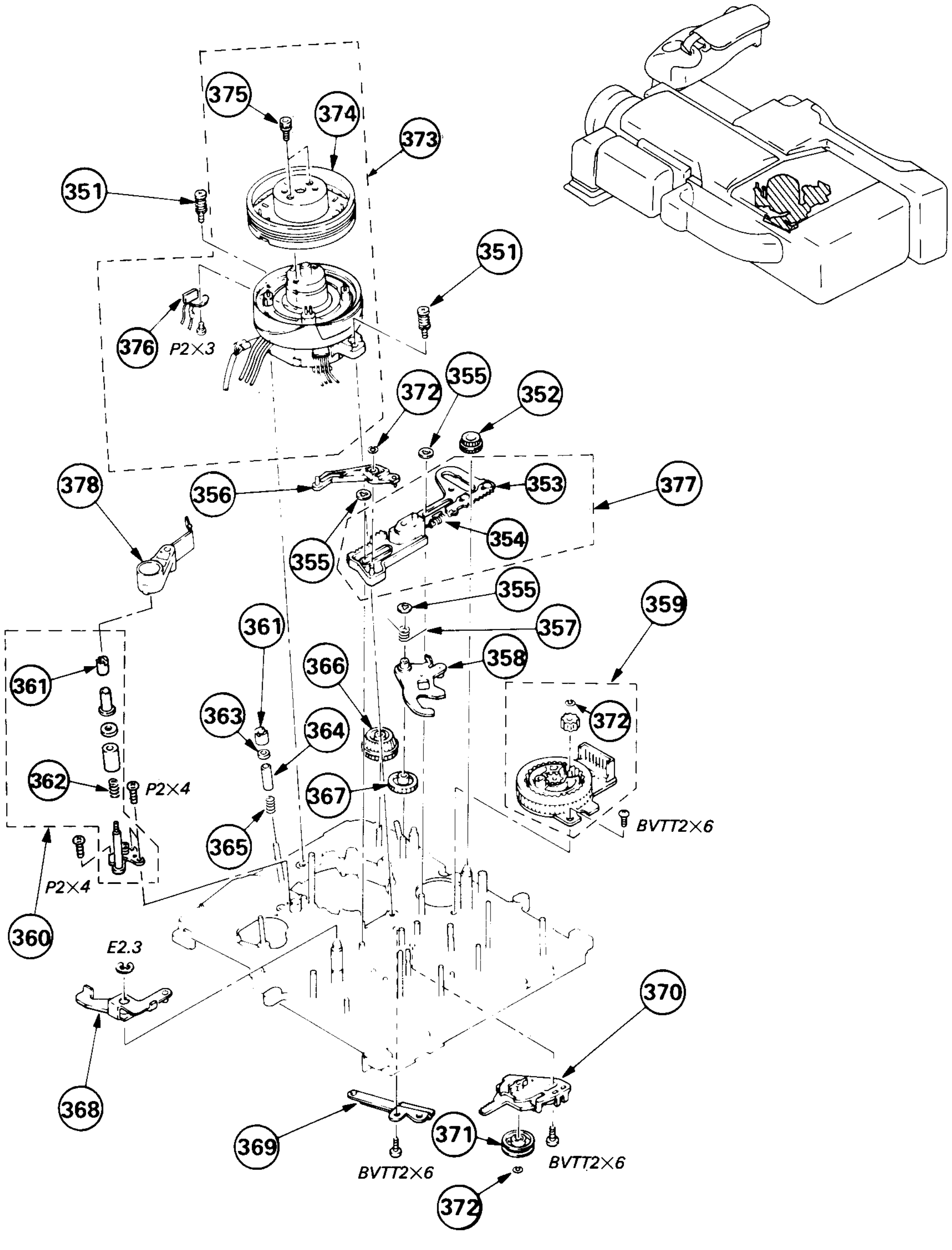
BVTT2×6
328
BVTT
2×6
BVTT2×6
322
329
327
313
323
324
330
BVTT2×6
326

No.	Part No.	Description	Remark
301	X-3686-531-1	BAND ASSY, TENSION REGULATOR	
302	A-7040-059-A	ARM ASSY, TENSION REGULATOR	303-305
303	3-699-519-01	SPRING, TENSION	
304	*X-3686-523-1	PLATE ASSY, TENSION REGULATOR	
305	3-699-609-01	SPRING, COMPRESSION	
306	X-3686-763-1	GEAR (B) ASSY, DRIVING	
307	X-3686-572-2	TABLE ASST, REEL, TAKE-UP	
308	X-3686-571-2	TABLE ASST, REEL, SUPPLY	
309	A-7040-008-A	ARM ASSY, PINCH PRESS	315-317, 319, 320
310	X-3686-750-1	DRIVING COMPLETE ASSY	329
311	*3-686-637-01	BRAKE (S), SOFT	
312	3-714-014-01	SPRING, TENSION	
313	*3-686-760-01	GUIDE, BAND	
314	*A-7070-024-A	LD-1 BOARD, COMPLETE	
315	3-686-568-01	SPRING, TORSION	
316	3-686-885-01	SPRING, TENSION	
317	A-7040-008-A	ARM, PINCH PRESS	
318	3-669-465-00	WASHER (1.5), STOPPER	
319	A-7040-008-A	ARM, PINCH LIMITER	
320	A-7040-008-A	SLEEVE, PINCH PRESS	
321	*X-3686-525-1	HOOK ASSY, SPRING	
322	*X-3686-529-1	BASE ASSY, CHANGE GEAR	
323	X-3686-520-1	GEAR ASSY, CHANGE	
324	*3-686-596-01	FLANGE, GEAR	
325	X-3686-590-1	BRAKE ASSY, REV	
326	3-686-646-01	BELT, TIMIMG	
327	*3-686-991-01	STOPPER, REEL TABLE	
328	3-669-480-11	+ PTPWH 2	
329	3-701-436-11	WASHER, 1.6 POLYETHYLENE	
330	3-315-384-31	WASHER, STOPPER	

5-8. CHASSIS ASSEMBLY (3)


375
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P2×3
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372
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P2×4
367
BVTT2×6
365
P2×4
360
E2.3
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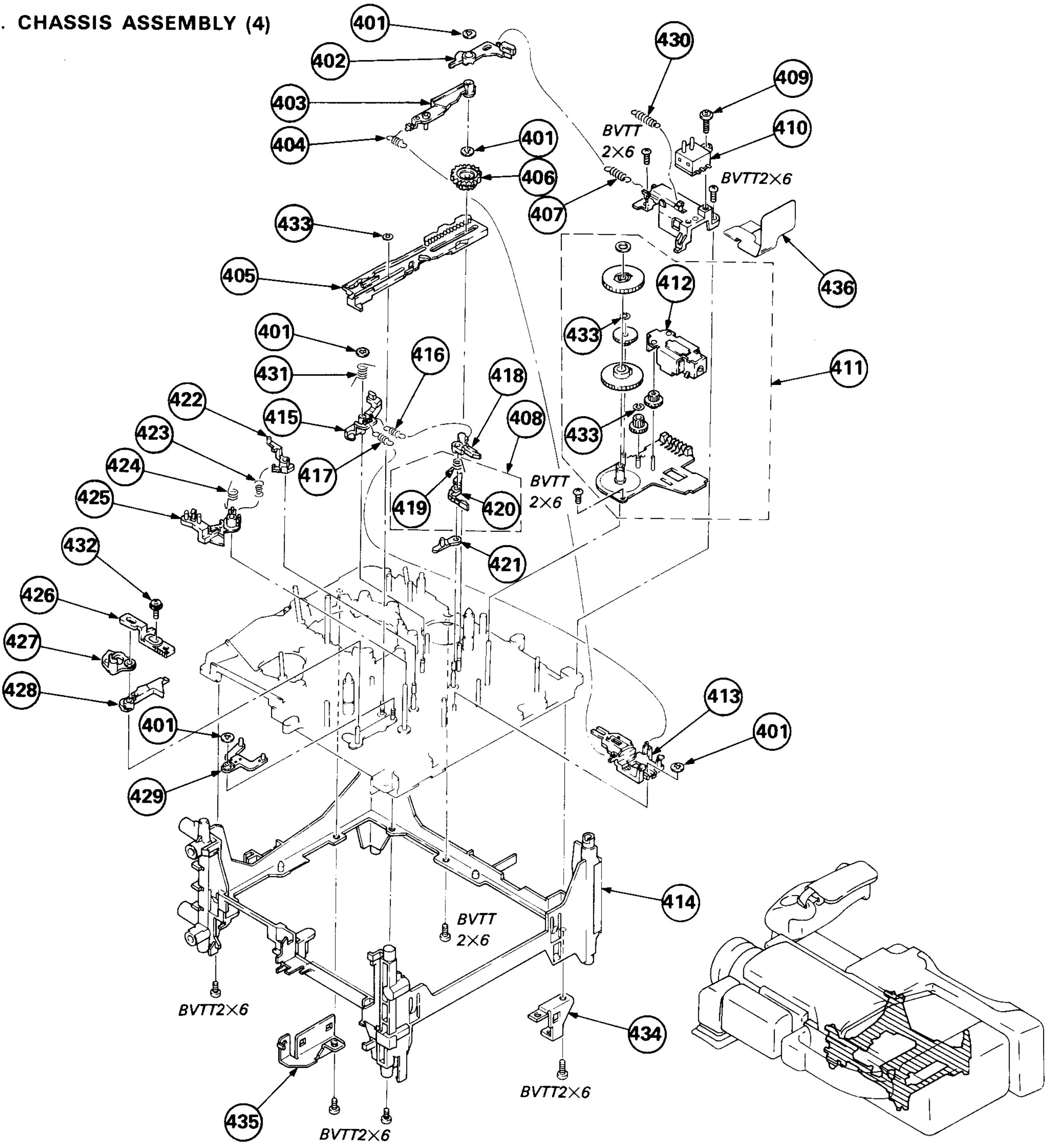
368
369
371
BVTT2×6
BVTT2×6
372

No.	Part No.	Description	Remark
351	X-3686-915-1	SCREW ASSY, FITTING	
352	3-686-702-01	GEAR, DRIVING, GUIDE, SLANT	
353	A-7040-010-A	SLIDER SUB ASSY, L	
354	3-686-886-01	SPRING, TENSION	
355	3-669-465-00	WASHER (1.5), STOPPER	
356	*X-3686-518-3	ARM ASSY	
357	3-686-540-01	SPRING, TORSION	
358	X-3686-579-1	CHANGE ASSY, DRIVE	
359	X-3712-403-1	L-SW ASSY	
360	A-7040-058-A	GUIDE BLOCK COMPLETE ASSY, #5	361, 362
361	3-686-724-01	NUT, GUIDE	
362	3-699-514-01	SPRING, COMPRESSION	
363	*3-686-894-01	FLANGE, #3 #4 GUIDE	
364	3-686-912-01	GUIDE, #3 #4	
365	3-699-609-01	SPRING, COMPRESSION	
366	3-686-539-01	GEAR, NO.9	
367	3-686-535-01	GEAR, NO.8	
368	*X-3686-509-1	LEVER ASSY, PINCH PRESS	
369	1-535-535-11	TERMINAL, SHAFT GROUND	
370	X-3686-521-1	BASE ASSY, IDLER	
371	X-3686-522-1	IDLER ASSY	
372	3-315-384-31	WASHER, STOPPER	
373	A-7048-159-A	DRUM ASSY (DGH-30A-R)	374-376
374	A-7049-160-A	DRUM ASSY, ROTARY UPPER (DGR-30-R)	
375	3-686-403-01	SCREW (2X5), BOLT WASHER	
376	1-806-975-11	SENSOR, DEW CONDENSATION	
377	*A-7040-010-A	SLIDER ASSY, L	353, 354
378	*3-688-917-01	STOPPER, TAPE	

5-9. CHASSIS ASSEMBLY (4)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BVTT
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BVTT2×6
407
433
405
412
436
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416
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433
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419
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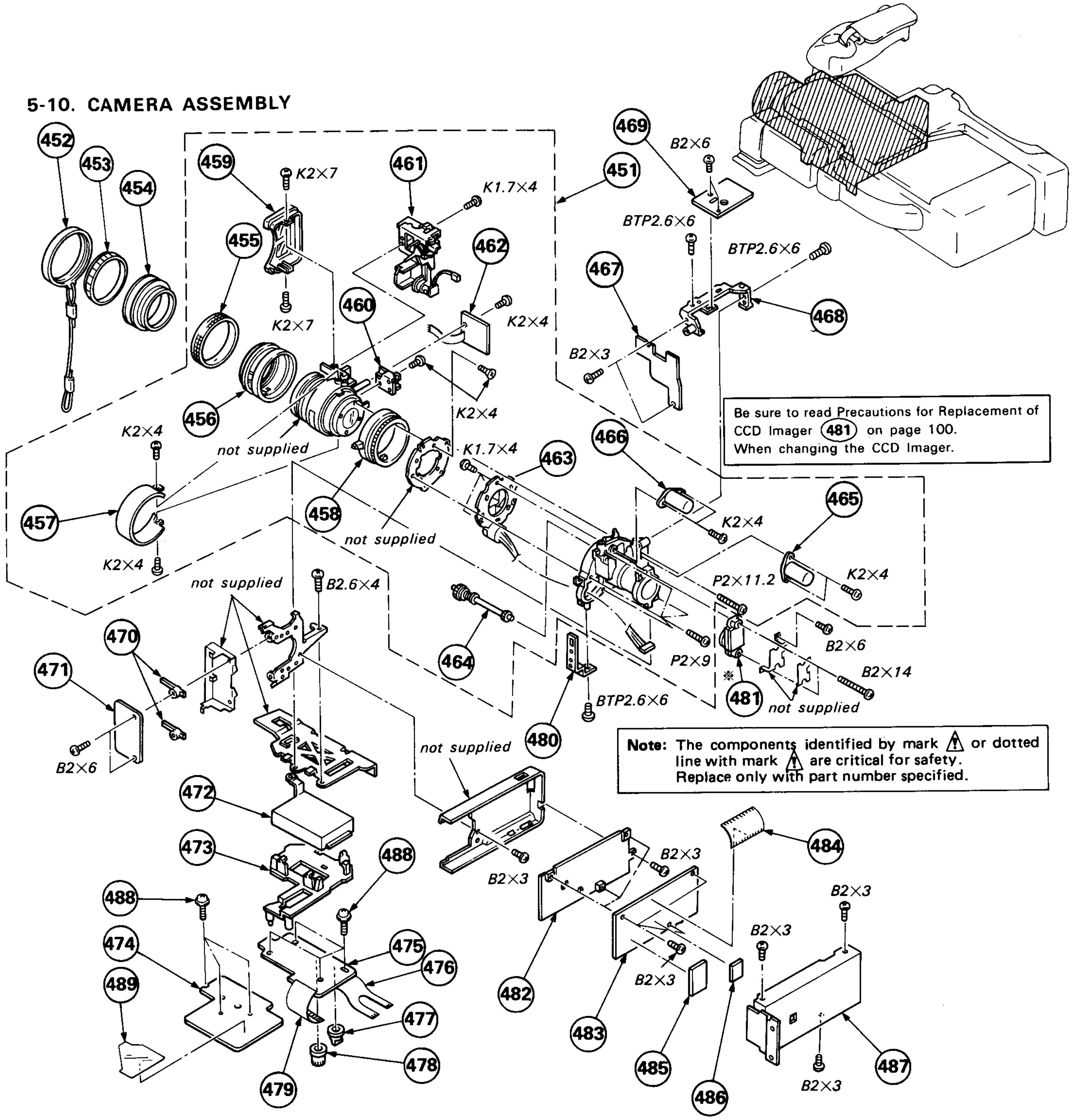
BVTT
2×6
425
421
432
426
427
428
401
413
401
429
414
BVTT
2×6
BVTT2×6
434
BVTT2×6
435
BVTT2×6

No.	Part No.	Description	Remark
401	3-669-465-00	WASHER (1.5), STOPPER	
402	X-3686-777-1	BRAKE ASSY, T.S	
403	*X-3686-528-4	ARM ASSY, B RELEASE	
404	3-686-903-01	SPRING, TENSION	
405	*3-686-657-11	SLIDER, M	
406	3-686-909-01	GEAR, MODE OUTPUT	
407	3-699-649-01	SPRING, TENSION	
408	A-7040-016-D	ARM ASSY, RVS	419, 420
409	3-669-480-11	+ PTPWH 2	
410	1-554-942-11	SWITCH, PUSH (RECOG) (S902)	
411	A-7090-029-A	M-SW ASSY	412, 438
412	8-835-138-01	MOTOR, DC (DNR-5301B)	
413	*3-686-656-01	SLIDER, B RELEASE	
414	X-3713-910-1	FRAME ASSY, MOLD	
415	*3-686-634-01	ARM, RL	
416	3-686-906-01	SPRING, TENSION	
417	3-686-904-01	SPRING, TENSION	
418	X-3686-510-1	BRAKE ASSY, REW	
419	3-686-617-01	SPRING	
420	A-7040-016-D	ARM, RVS	
421	*3-686-580-01	ARM, SET UP	
422	3-686-996-01	BRAKE (S), HARD	
423	3-686-905-02	SPRING, TENSION	
424	3-686-603-04	SPRING	
425	*3-686-644-01	ARM, BAND	
426	*3-686-642-01	PLATE, ADJUSTMENT, BAND	
427	*3-686-755-01	DISK, EJECT	
428	*3-686-643-01	ARM, MODE	
429	*X-3686-530-1	ARM (A) ASSY, SELECTION	
430	3-699-650-01	SPRING, TENSION	
431	3-686-579-01	SPRING	
432	3-686-528-01	SCREW (2X6), +	
433	3-315-384-31	WASHER, STOPPER	
434	3-712-507-01	SHEET METAL, VI FITTING	
435	3-712-527-01	BRACKET, SS	
436	1-619-921-11	FP-19 FLEXIBLE BOARD	

5-10. CAMERA ASSEMBLY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BTP2.6×6
BTP2.6×6
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462
467
468
460
K2×4
K2×7
B2×3
K2×4
456
K2×4
not supplied
K1.7×4
463
466
457
458
not supplied
K2×4
465
K2×4
not supplied
B2.6×4
P2×11.2
K2×4
470
471
464
B2×6
P2×9
B2×14
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481
not supplied
BTP2.6×6
480
B2×6
not supplied
472
473
488
B2×3
B2×3
484
488
B2×3
B2×3
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B2×3
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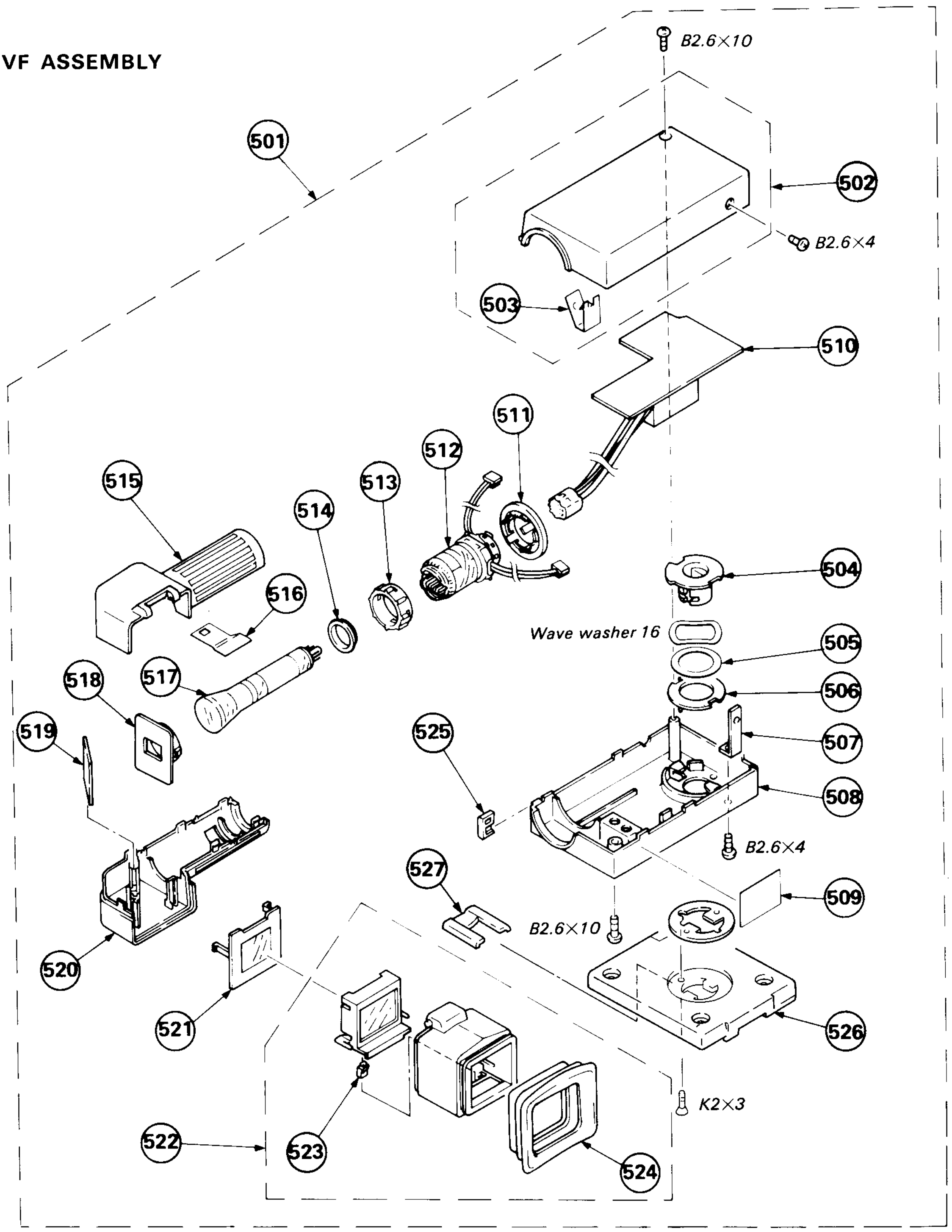
B2×3

Be sure to read Precautions for Replacement of CCD Imager ⑷⑻① on page 100. When changing the CCD Imager.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remark
451	1-547-262-11	LENS, ZOOM (VCL-1108YA)	455-466
452	3-721-712-01	CAP, HOOD	
453	3-721-711-01	RING, HOOD	
454	3-721-710-01	HOOD, LENS	
455	3-707-416-01	RUBBER, FOCUS	
456	3-707-436-01	RING, DISTANCE	
457	3-707-421-01	COVER	
458	3-707-441-01	RING ASSY, ZOOM	
459	3-707-420-01	COVER, AF	
460	3-707-437-01	SW ASSY, END	
461	3-707-439-01	RAY CATCHER, AF LUMINOUS	
462	*A-7051-144-A	AF-43 BOARD, COMPLETE	
463	3-707-438-01	IRIS ASSY	
464	3-707-440-01	SHAFT ASSY, DRIVE	
465	3-707-417-01	MOTOR ASSY, AF (FOCUS)	
466	3-707-418-01	MOTOR ASSY, PZ (ZOOM)	
467	*A-7061-127-A	AW-10 BOARD, COMPLETE	
468	*X-3713-928-1	BRACKET ASSY, LENS	
469	*A-7061-128-A	ZM-6 BOARD, COMPLETE	
470	*3-712-571-01	CALLOR, AW	
471	*A-7070-658-A	EM-2 BOARD, COMPLETE	
472	⚠ 1-464-897-11	CONVERTER UNIT, DC-DC	
473	*3-721-702-01	FRAME, D/D CONVERTER	
474	*A-7061-125-A	FC-15 BOARD, COMPLETE	
475	*A-7061-126-A	CG-2 BOARD, COMPLETE	
476	1-626-251-11	FP-116 FLEXIBLE BOARD	
477	3-720-569-01	KNOB, SHUTTER	
478	3-720-561-01	KNOB, IRIS	
479	1-626-252-11	FP-117 FLEXIBLE BOARD	
480	*3-720-559-01	BRACKET, CABINET	
481	8-750-010-89	IU024AK-11A (CCD IMAGER)	
482	*A-7061-123-A	VC-36 BOARD, COMPLETE	
483	*A-7061-124-A	VC-37 BOARD, COMPLETE	485-487
484	1-626-250-11	FP-109 FLEXIBLE BOARD	
485	A-7068-082-A	DT-62 BOARD, COMPLETE (HIC)	
486	A-7068-126-A	CP-21 BOARD, COMPLETE (HIC)	
487	*X-3712-160-1	PLATE ASSY, SHIELD, VC	
488	3-669-480-11	+ PTPWH 2	
489	*X-3713-964-1	SHEET (C) ASSY, ELECTROSTATIC	

5-11. EVF ASSEMBLY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Wave washer 16
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519
525
B2.6×4
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527
B2.6×10
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524
K2×3

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remark
501	*A-7019-083-A	EVF ASSY (AEP MODEL)	502-528
	*A-7019-096-A	EVF ASSY (UK MODEL)	
502	X-3713-952-1	CASE ASSY, EVF (UPPER)	503
503	X-3686-873-1	SPRING ASSY	
504	3-712-664-01	SHAFT, EVF ROTARY	
505	3-712-655-01	SLIDER, EVF	
506	X-3713-960-1	HOLDER ASSY, CLICK	
507	*3-713-558-01	BRACKET	
508	3-712-672-21	CASE, EVF (LOWER)	
509	3-663-807-00	LABEL, CAUTION, EVF	
510	*A-7061-148-A	VF-7 BOARD, COMPLETE (AEP MODEL)	
	*A-7061-159-A	VF-7 BOARD, COMPLETE (UK MODEL)	
511	3-712-645-01	RING, CRT HOLDER	
512	⚠.1-451-296-11	DEFLECTION YOKE(BLACK & WHITE) (L901)	
513	*3-712-658-01	RETAINER, CRT	
514	*3-712-660-01	RING, RUBBER	
515	*3-712-670-21	HOLDER (UPPER), CRT	
516	3-712-657-01	SPRING, LEAF	
517	⚠.1-546-061-11	CATHODE-RAY TUBE, B/W (V901)	
518	*3-712-659-01	COVER, CRT	
519	3-712-656-01	MIRROR, REFLECTION	
520	*3-712-669-21	HOLDER (LOWER), CRT	
521	X-3686-859-3	HOLDER (2) ASSY, LENS	
522	*A-7080-484-A	HOLDER ASSY, LENS	523, 524
523	3-712-566-01	KNOB, ADJUSTMENT	
524	3-696-016-11	EYE CAP	
525	*3-712-667-21	PLATE, ORNAMENTAL	
526	X-3713-927-1	CABINET (UPPER) ASSY	527
527	*3-712-647-01	SUPPORT, EVF ROTARY SHAFT	

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- –XX, –X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE : Metal Oxide-film resistor
  F : nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, U : μ, for example:
  UA...: μA..., UPA...: μPA...,
  UPB...: μPB..., UPC...: μPC...,
  UPD...: μPD...
- CAPACITORS
  MF : μF, PF : μμF
- COILS
  MMH : mH, UH : μH

Ref.No	Part No.	Description	Remark
	*A-7060-343-A	RS-18 BOARD, COMPLETE **********************	
	3-712-106-01	REINFORCEMENT (333)	
	3-712-410-01	HOLDER, RS	
		CAPACITOR	
C301	1-124-229-00	ELECT 33MF 20% 10V	
C302	1-124-225-00	ELECT 100MF 20% 6.3V	
		CONNECTOR	
CN301	*1-564-012-00	PIN, CONNECTOR 2P	
CN302	*1-564-012-00	PIN, CONNECTOR 2P	
CN304	*1-563-494-11	CONNECTOR, F.P.C 6P	
CN306	*1-564-012-00	PIN, CONNECTOR 2P	
		DIODE	
D301	8-719-100-03	DIODE 1S2835	
D302	8-719-100-03	DIODE 1S2835	
D303	8-719-100-03	DIODE 1S2835	
D304	8-719-801-41	DIODE 1SS196	
D305	8-719-801-41	DIODE 1SS196	
D306	8-719-801-41	DIODE 1SS196	
D307	8-719-200-27	DIODE E10DS2	
D308	8-719-200-27	DIODE E10DS2	
D309	8-719-100-05	DIODE 1S2837	
D310	8-719-200-27	DIODE E10DS2	
		IC	
IC301	8-759-908-81	IC MB3763PF	
IC302	8-759-207-00	IC TA7733F	
		DIODE	
PH301	8-719-939-11	GP2S09-B	
PH302	8-719-939-11	GP2S09-B	
PH303	8-719-939-11	GP2S09-B	
		TRANSISTOR	
Q301	8-729-199-92	TRANSISTOR 2SD999	
Q302	8-729-901-05	TRANSISTOR DTA124EK	
Q303	8-729-900-53	TRANSISTOR DTC114EK	
Q304	8-729-901-05	TRANSISTOR DTA124EK	
Q305	8-729-106-41	TRANSISTOR 2SB1114-ZL	
Q306	8-729-106-41	TRANSISTOR 2SB1114-ZL	
Q307	8-729-901-09	TRANSISTOR DTA114EK-T-96	
Q308	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q309	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q310	8-729-903-30	TRANSISTOR DTC144TK	
Q311	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q312	8-729-903-30	TRANSISTOR DTC144TK	
Q313	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q314	8-729-903-30	TRANSISTOR DTC144TK	

Ref.No	Part No.	Description	Remark
		RESISTOR	
R301	1-216-190-00	METAL GLAZE 470 5% 1/8W	
R302	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R303	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R304	1-216-170-00	METAL GLAZE 68 5% 1/8W	
R305	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R308	1-216-150-00	METAL GLAZE 10 5% 1/8W	
R309	1-216-150-00	METAL GLAZE 10 5% 1/8W	
R310	1-216-178-00	METAL GLAZE 150 5% 1/8W	
R311	1-216-178-00	METAL GLAZE 150 5% 1/8W	
R312	1-216-178-00	METAL GLAZE 150 5% 1/8W	
R313	1-216-160-00	METAL GLAZE 27 5% 1/8W	
R314	1-216-170-00	METAL GLAZE 68 5% 1/8W	
R315	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
R316	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R317	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R319	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
R320	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R321	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R323	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
R324	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R325	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R327	1-216-154-00	METAL GLAZE 15 5% 1/8W	
		FLAT TYPE	
W305	*1-558-782-11	WIRE, FLAT TYPE 20P	

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Ref.No	Part No.	Description	Remark
	*A-7061-114-A	VI-48 BOARD, COMPLETE **********************	
	A-7068-123-A	VY-9 BOARD, COMPLETE (HIC)	
	A-7068-124-A	VD-6 BOARD, COMPLETE (HIC)	
	A-7068-125-A	VC-11 BOARD, COMPLETE (HIC)	
	2-279-715-01	RIVET, NYLON	
	3-714-021-01	COVER, VR	
	4-352-844-01	PIN, LEAD, COATING	
		CAPACITOR	
C201	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C203	1-163-986-00	CERAMIC CHIP 0.027MF 10% 25V	
C204	1-163-108-00	CERAMIC CHIP 43PF 5% 50V	
C205	1-163-986-00	CERAMIC CHIP 0.027MF 10% 25V	
C207	1-124-442-00	ELECT 330MF 20% 6.3V	
C208	1-124-224-00	ELECT 47MF 20% 6.3V	
C214	1-124-224-00	ELECT 47MF 20% 6.3V	
C215	1-163-035-00	CERAMIC CHIP 0.047MF 50V	
C216	1-163-145-00	CERAMIC CHIP 0.0015MF 5% 50V	
C217	1-163-101-00	CERAMIC CHIP 22PF 5% 50V	
C218	1-163-141-00	CERAMIC CHIP 0.001MF 5% 50V	

Ref.No	Part No.	Description		Remark
C219	1-163-111-00	CERAMIC CHIP 56PF	5%	50V
C220	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C222	1-163-113-00	CERAMIC CHIP 68PF	5%	50V
C223	1-163-097-00	CERAMIC CHIP 15PF	5%	50V
C224	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C228	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C229	1-163-127-00	CERAMIC CHIP 270PF	5%	50V
C230	1-163-986-00	CERAMIC CHIP 0.027MF	10%	25V
C231	1-163-145-00	CERAMIC CHIP 0.0015MF	5%	50V
C232	1-163-105-00	CERAMIC CHIP 33PF	5%	50V
C233	1-163-986-00	CERAMIC CHIP 0.027MF	10%	25V
C234	1-163-093-00	CERAMIC CHIP 10PF	5%	50V
C235	1-163-986-00	CERAMIC CHIP 0.027MF	10%	25V
C236	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C237	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C238	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C239	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C240	1-124-224-00	ELECT 47MF	20%	6.3V
C241	1-163-097-00	CERAMIC CHIP 15PF	5%	50V
C243	1-124-587-11	ELECT 220MF	20%	6.3V
C250	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C301	1-163-087-00	CERAMIC CHIP 4PF	0.25PF	50V
C302	1-163-105-00	CERAMIC CHIP 33PF	5%	50V
C303	1-163-986-00	CERAMIC CHIP 0.027MF	10%	25V
C304	1-124-222-00	ELECT 22MF	20%	6.3V
C305	1-124-222-00	ELECT 22MF	20%	6.3V
C306	1-163-129-00	CERAMIC CHIP 330PF	5%	50V
C307	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C310	1-124-224-00	ELECT 47MF	20%	6.3V
C315	1-163-113-00	CERAMIC CHIP 68PF	5%	50V
C321	1-163-113-00	CERAMIC CHIP 68PF	5%	50V
C322	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C323	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C325	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C326	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C329	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C330	1-124-224-00	ELECT 47MF	20%	6.3V
C331	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C335	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C360	1-163-097-00	CERAMIC CHIP 15PF	5%	50V
C380	1-163-035-00	CERAMIC CHIP 0.047MF		50V

CONNECTOR

Ref.No	Part No.	Description
CN201	*1-564-013-00	PIN, CONNECTOR 3P
CN202	*1-564-014-00	PIN, CONNECTOR 4P
CN203	*1-564-012-00	PIN, CONNECTOR 2P
CN204	*1-564-016-00	PIN, CONNECTOR 6P

DIODE

Ref.No	Part No.	Description
D201	8-719-101-23	DIODE 1SS123
D202	8-719-101-23	DIODE 1SS123
D203	8-719-106-44	DIODE RD9.1M-B2
D205	8-719-100-05	DIODE 1S2837

DELAY LINE

Ref.No	Part No.	Description	Remark
DL201	1-415-517-21	DELAY LINE, DUAL 1H-2H	

CONVERTER

Ref.No	Part No.	Description	Remark
DR201	⚠1-464-898-11	CONVERTER, DC-DC	

FILTER

Ref.No	Part No.	Description	Remark
FL201	1-235-632-11	BPF	
FL202	1-235-633-11	BPF	
FL203	1-409-394-11	TRAP, CHROMA EMPHASIS	

IC

Ref.No	Part No.	Description	Remark
IC201	8-757-991-00	IC CX-7991	
IC202	8-759-200-60	IC TA7060AP	

COIL

Ref.No	Part No.	Description	Remark
L201	1-410-141-11	INDUCTOR 8.2UH	
L202	1-410-828-11	INDUCTOR 47UH	
L203	1-408-982-11	INDUCTOR 100UH	
L204	1-408-970-21	INDUCTOR 10UH	
L205	1-410-808-11	INDUCTOR 1UH	
L206	1-410-808-11	INDUCTOR 1UH	
L207	1-408-982-11	INDUCTOR 100UH	
L208	1-408-982-11	INDUCTOR 100UH	
L209	1-408-976-21	INDUCTOR 33UH	
L210	1-408-982-11	INDUCTOR 100UH	
L212	1-410-167-31	INDUCTOR CHIP 820UH	
L213	1-408-795-21	INDUCTOR CHIP 330UH	
L220	1-408-969-21	INDUCTOR 8.2UH	
L221	1-408-985-21	INDUCTOR 180UH	
L301	1-410-627-11	COIL, CHOKE 100UH	
L302	1-410-377-11	INDUCTOR CHIP 4.7UH	
L321	1-408-970-21	INDUCTOR 10UH	

VARIABLE COIL

Ref.No	Part No.	Description	Remark
LV201	1-404-594-11	COIL, VARIABLE	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q201	8-729-901-03	TRANSISTOR DTC144WK	
Q202	8-729-901-03	TRANSISTOR DTC144WK	
Q203	8-729-901-03	TRANSISTOR DTC144WK	
Q204	8-729-100-76	TRANSISTOR 2SA812	
Q205	8-729-901-03	TRANSISTOR DTC144WK	
Q209	8-729-100-66	TRANSISTOR 2SC1623	
Q211	8-729-100-66	TRANSISTOR 2SC1623	
Q212	8-729-100-66	TRANSISTOR 2SC1623	
Q213	8-729-900-99	TRANSISTOR DTA144WK	
Q220	8-729-312-22	TRANSISTOR 2SA1122C	
Q221	8-729-100-66	TRANSISTOR 2SC1623	
Q222	8-729-100-66	TRANSISTOR 2SC1623	
Q223	8-729-100-66	TRANSISTOR 2SC1623	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description				Remark
Q224	8-729-100-66	TRANSISTOR 2SC1623				
Q225	8-729-901-03	TRANSISTOR DTC144WK				
Q226	8-729-100-66	TRANSISTOR 2SC1623				
Q227	8-729-100-66	TRANSISTOR 2SC1623				
Q228	8-729-100-66	TRANSISTOR 2SC1623				
Q229	8-729-903-29	TRANSISTOR DTA144TK				
Q230	8-729-100-66	TRANSISTOR 2SC1623				
Q240	8-729-101-54	TRANSISTOR 2SA1175				
Q241	8-729-901-03	TRANSISTOR DTC144WK				
Q243	8-729-901-03	TRANSISTOR DTC144WK				
Q244	8-729-900-94	TRANSISTOR DTA144WK				
Q245	8-729-900-94	TRANSISTOR DTA144WK				
Q247	8-729-100-66	TRANSISTOR 2SC1623				
Q248	8-729-901-03	TRANSISTOR DTC144WK				
Q249	8-729-901-03	TRANSISTOR DTC144WK				
Q250	8-729-901-03	TRANSISTOR DTC144WK				
Q252	8-729-901-03	TRANSISTOR DTC144WK				
Q271	8-729-100-66	TRANSISTOR 2SC1623				
Q272	8-729-100-66	TRANSISTOR 2SC1623				
Q281	8-729-100-66	TRANSISTOR 2SC1623				
Q282	8-729-903-30	TRANSISTOR DTC144TK				

RESISTOR

Ref.No	Part No.	Description				Remark
R203	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R204	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R205	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R206	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R207	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R208	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R212	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R213	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R214	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R215	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R216	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R217	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R220	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R221	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R222	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R223	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R224	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R225	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R226	1-216-027-00	METAL GLAZE	120	5%	1/10W	
R227	1-216-035-00	METAL GLAZE	270	5%	1/10W	
R228	1-216-027-00	METAL GLAZE	120	5%	1/10W	
R229	1-216-009-00	METAL GLAZE	22	5%	1/10W	
R230	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R237	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R238	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R239	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R240	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R241	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R242	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	

Ref.No	Part No.	Description				Remark
R243	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R244	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R245	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R246	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R248	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R249	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R250	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R251	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R252	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R253	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R255	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R256	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R259	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R260	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R261	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R262	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R263	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R264	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R265	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R266	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R267	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R268	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R269	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R270	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R271	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R272	1-216-023-00	METAL GLAZE	82	5%	1/10W	
R273	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R274	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R276	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R277	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R278	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R279	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R280	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R281	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R288	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R289	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R293	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R294	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R295	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R296	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R297	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R298	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R300	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R301	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R302	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R303	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R304	1-216-109-00	METAL GLAZE	330K	5%	1/10W	
R305	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R309	1-216-015-00	METAL GLAZE	39	5%	1/10W	
R310	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R315	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R320	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R321	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R322	**1-216-057-00**	**METAL GLAZE**	**2.2K**	**5%**	**1/10W**	
R323	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R324	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R325	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R327	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R328	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R329	1-216-031-00	METAL GLAZE	180	5%	1/10W	
R331	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R332	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R333	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R341	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R342	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R343	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R344	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R346	1-216-015-00	METAL GLAZE	39	5%	1/10W	
R347	1-216-015-00	METAL GLAZE	39	5%	1/10W	
R348	1-216-009-00	METAL GLAZE	22	5%	1/10W	
R360	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R365	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R366	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R367	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R368	1-216-089-00	METAL GLAZE	47K	5%	1/10W	

VARIABLE RESISTOR

RV203	1-230-524-11	RES, ADJ, METAL GLAZE 22K

CONNECTOR

W201	1-564-098-21	CONNECTOR, BOARD TO BOARD 8P
W202	1-564-610-31	CONNECTOR, BOARD TO BOARD

CRYSTAL

X201	1-567-347-11	OSCILLATOR, CERAMIC

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*A-7061-116-A RP-66 BOARD, COMPLETE
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A-7068-106-A RP-59 BOARD, COMPLETE (HIC)

CAPACITOR

Ref.No	Part No.	Description			Remark
C101	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C102	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C103	1-124-224-00	ELECT	47MF	20%	6.3V
C104	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C105	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C106	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C107	1-124-222-00	ELECT	22MF	20%	6.3V
C108	**1-163-113-00**	**CERAMIC CHIP**	**68PF**	**5%**	**50V**
C109	1-124-462-00	ELECT	10MF	20%	16V
C110	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C111	1-124-222-00	ELECT	22MF	20%	6.3V
C112	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C114	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C115	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C116	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C129	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C130	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C131	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C132	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C133	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C134	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C135	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C136	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C137	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C138	1-124-257-00	ELECT	2.2MF	20%	35V
C139	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C140	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C141	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C142	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C143	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C144	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C145	1-124-224-00	ELECT	47MF	20%	6.3V
C146	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C147	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C150	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C151	1-163-117-00	CERAMIC CHIP	100PF	5%	50V

CONNECTOR

CN101	*1-564-019-11	PIN, CONNECTOR 9P
CN102	*1-564-013-00	PIN, CONNECTOR 3P
CN103	*1-564-003-00	PIN, CONNECTOR 4P
CN104	*1-564-005-00	PIN, CONNECTOR 6P
CN105	*1-564-012-00	PIN, CONNECTOR 2P

COIL

L101	1-408-876-00	INDUCTOR	0.18UH
L102	1-410-824-11	INDUCTOR	22UH
L103	**1-410-819-41**	**INDUCTOR**	**8.2UH**
L104	1-410-824-11	INDUCTOR	22UH
L109	1-408-948-00	INDUCTOR	220UH
L110	1-408-970-21	INDUCTOR	10UH

TRANSISTOR

Q101	8-729-901-02	TRANSISTOR DTC124XK
Q102	8-729-102-07	TRANSISTOR 2SC2223-F13
Q103	8-729-102-07	TRANSISTOR 2SC2223-F13
Q104	8-729-100-67	TRANSISTOR 2SC1623-L7
Q105	8-729-100-67	TRANSISTOR 2SC1623-L7
Q106	8-729-100-67	TRANSISTOR 2SC1623-L7
Q107	8-729-901-05	TRANSISTOR DTA124EK
Q108	8-729-901-00	TRANSISTOR DTC124EK
Q109	8-729-100-67	TRANSISTOR 2SC1623-L7
Q120	8-729-901-04	TRANSISTOR DTA114EK
Q121	8-729-100-67	TRANSISTOR 2SC1623-L7
Q122	8-729-100-67	TRANSISTOR 2SC1623-L7

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description	Remark
Q123	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q124	8-729-901-04	TRANSISTOR DTA114EK	
Q125	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q126	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q127	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q128	8-729-117-54	TRANSISTOR 2SA1175	
Q130	8-729-100-76	TRANSISTOR 2SA812	
Q132	8-729-901-03	TRANSISTOR DTC144WK	
Q133	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q134	8-729-100-67	TRANSISTOR 2SC1623-L7	

RESISTOR

Ref.No	Part No.	Description	Remark
R101	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
R102	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R103	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R104	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R105	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R106	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R107	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R108	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R109	1-216-029-00	METAL GLAZE 150 5% 1/10W	
R110	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R111	1-216-047-00	METAL GLAZE 820 5% 1/10W	
R112	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R113	1-216-015-00	METAL GLAZE 39 5% 1/10W	
R114	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R143	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R144	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R145	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R146	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R147	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R148	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R149	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R150	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R151	1-216-039-00	METAL GLAZE 390 5% 1/10W	
R152	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R153	1-216-093-00	METAL GLAZE 68K 5% 1/10W	
R154	1-216-047-00	METAL GLAZE 820 5% 1/10W	
R155	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R158	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R159	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R160	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R161	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R162	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R163	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R164	1-216-047-00	METAL GLAZE 820 5% 1/10W	
R165	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R166	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R167	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R170	1-216-009-00	METAL GLAZE 22 5% 1/10W	
R171	1-216-043-00	METAL GLAZE 560 5% 1/10W	
R172	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R173	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R174	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R175	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R176	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R177	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R178	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R179	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R180	1-216-043-00	METAL GLAZE 560 5% 1/10W	
R181	1-216-039-00	METAL GLAZE 390 5% 1/10W	
R182	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R183	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R184	1-216-218-00	METAL GLAZE 6.8K 5% 1/8W	
R185	1-216-025-00	METAL GLAZE 100 5% 1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV101	1-230-523-11	RES, ADJ, METAL GLAZE 10K	
RV102	1-230-868-11	RES, ADJ, METAL GLAZE 2.2K	

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*A-7061-115-A AU-48 BOARD, COMPLETE

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CAPACITOR

Ref.No	Part No.	Description	Remark
C401	1-163-019-00	CERAMIC CHIP 0.0068MF 10% 50V	
C402	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C403	1-124-499-11	ELECT 1MF 20% 50V	
C404	1-124-465-00	ELECT 0.47MF 20% 50V	
C405	1-124-225-00	ELECT 100MF 20% 6.3V	
C406	1-124-225-00	ELECT 100MF 20% 6.3V	
C407	1-124-225-00	ELECT 100MF 20% 6.3V	
C408	1-124-257-00	ELECT 2.2MF 20% 35V	
C409	1-124-245-00	ELECT 4.7MF 20% 16V	
C410	1-124-222-00	ELECT 22MF 20% 6.3V	
C411	1-124-225-00	ELECT 100MF 20% 6.3V	
C412	1-124-222-00	ELECT 22MF 20% 6.3V	
C413	1-124-225-00	ELECT 100MF 20% 6.3V	
C420	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C421	1-124-257-00	ELECT 2.2MF 20% 35V	
C422	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C423	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C424	1-162-993-11	CERAMIC CHIP 0.22MF 10% 16V	
C425	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C426	1-162-993-11	CERAMIC CHIP 0.22MF 10% 16V	
C428	1-124-222-00	ELECT 22MF 20% 6.3V	

CONNECTOR

Ref.No	Part No.	Description	Remark
CN401	*1-564-012-71	PIN, CONNECTOR 2P	
CN402	*1-564-012-00	PIN, CONNECTOR 2P	
CN403	*1-564-014-51	PIN, CONNECTOR 4P	

DIODE

Ref.No	Part No.	Description	Remark
D401	8-719-106-44	DIODE RD9.1M-B2	

When indicating parts by reference number, please include the board name.

FILTER

Ref.No	Part No.	Description	Remark
FL401	1-235-398-11	BPF	

IC

Ref.No	Part No.	Description	Remark
HIC401	8-741-150-51	IC SBX1505-21	

IC

Ref.No	Part No.	Description	Remark
IC401	8-759-111-56	IC UPC4572G2	

COIL

Ref.No	Part No.	Description	Remark
L401	1-408-978-21	INDUCTOR 47UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q401	8-729-900-99	TRANSISTOR DTA144WK	
Q402	8-729-901-01	TRANSISTOR DTC144EK	
Q403	8-729-100-67	TRANSISTOR 2SC1623-L7	

RESISTOR

Ref.No	Part No.	Description	Remark
R401	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R402	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R403	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R404	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R405	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R406	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R407	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
R409	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R410	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R420	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R421	1-216-093-00	METAL GLAZE 68K 5% 1/10W	
R422	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R423	1-216-103-00	METAL GLAZE 180K 5% 1/10W	
R424	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R425	1-216-091-00	METAL GLAZE 56K 5% 1/10W	
R426	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R427	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R428	1-247-833-00	CARBON 1.2K 5% 1/4W	
R450	1-249-429-11	CARBON 10K 5% 1/4W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV401	1-230-522-11	RES, ADJ, METAL GLAZE 4.7K	

CONNECTOR

Ref.No	Part No.	Description	Remark
W401	*1-564-098-00	CONNECTOR, BOARD TO BOARD 8P	

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*A-7061-117-A SS-83 BOARD, COMPLETE
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CAPACITOR

Ref.No	Part No.	Description	Remark
C151	1-163-023-00	CERAMIC CHIP 0.015MF 10% 50V	
C152	1-135-091-00	TANTAL. CHIP 1MF 20% 16V	
C153	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
C154	1-163-037-11	CERAMIC CHIP 0.022MF 10% 25V	
C155	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V	
C156	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C157	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C158	1-135-091-00	TANTAL. CHIP 1MF 20% 16V	
C159	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
C160	1-163-037-11	CERAMIC CHIP 0.022MF 10% 25V	
C161	1-163-023-91	CERAMIC CHIP 0.015MF 10% 25V	
C162	1-135-091-00	TANTAL. CHIP 1MF 20% 16V	
C163	1-124-462-00	ELECT 10MF 20% 6.3V	
C164	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C165	1-163-037-11	CERAMIC CHIP 0.022MF 10% 25V	
C166	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V	
C167	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V	
C168	1-163-013-00	CERAMIC CHIP 0.0022MF 10% 50V	
C169	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C170	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C171	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C172	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C173	1-135-099-00	TANTAL. CHIP 2.2MF 20% 6.3V	
C174	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C175	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C176	1-163-034-00	CERAMIC CHIP 0.033MF 10% 25V	
C177	1-163-037-11	CERAMIC CHIP 0.022MF 10% 25V	
C178	1-163-037-11	CERAMIC CHIP 0.022MF 10% 25V	
C179	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C180	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C181	1-163-103-00	CERAMIC CHIP 27PF 5% 50V	
C182	1-163-103-00	CERAMIC CHIP 27PF 5% 50V	
C183	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C184	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C185	1-163-037-11	CERAMIC CHIP 0.022MF 10% 25V	
C186	1-163-105-00	CERAMIC CHIP 33PF 5% 50V	
C187	1-163-105-00	CERAMIC CHIP 33PF 5% 50V	
C188	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C189	1-163-017-00	CERAMIC CHIP 0.0047MF 10% 50V	
C190	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V	
C191	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V	
C192	1-163-103-00	CERAMIC CHIP 27PF 5% 50V	
C193	1-163-103-00	CERAMIC CHIP 27PF 5% 50V	
C194	1-124-234-00	ELECT 22MF 20% 16V	
C195	1-124-222-00	ELECT 22MF 20% 6.3V	
C196	1-124-236-00	ELECT 47MF 20% 10V	
C197	1-124-462-00	ELECT 10MF 20% 10V	
C198	1-124-222-00	ELECT 22MF 20% 6.3V	
C199	1-124-257-00	ELECT 2.2MF 20% 35V	
C200	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C201	1-163-017-00	CERAMIC CHIP 0.0047MF 10% 50V	
C202	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C203	1-163-809-11	CERAMIC CHIP 0.047MF 10% 25V	
C204	1-124-462-00	ELECT 10MF 20% 6.3V	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description		Remark
C205	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C206	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C207	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C208	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C209	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C210	1-163-139-00	CERAMIC CHIP 820PF	5%	50V
C211	1-127-487-00	ELECT(SOLID) 4.7MF	20%	10V
C212	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C213	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C214	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C215	1-124-222-00	ELECT 22MF	20%	6.3V
C216	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C217	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V
C218	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C219	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C220	1-126-099-11	ELECT 2.2MF	20%	35V
C221	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C222	1-163-020-00	CERAMIC CHIP 0.0082MF	10%	50V
C223	1-126-099-11	ELECT 2.2MF	20%	35V
C224	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C225	1-124-499-11	ELECT 1MF	20%	50V
C226	1-124-499-11	ELECT 1MF	20%	50V
C227	1-163-023-00	CERAMIC CHIP 0.015MF	10%	50V
C228	1-124-499-11	ELECT 1MF	20%	50V
C229	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C230	1-124-462-00	ELECT 10MF	20%	16V
C231	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C232	1-163-209-00	CERAMIC CHIP 0.0015MF	5%	50V
C233	1-163-209-00	CERAMIC CHIP 0.0015MF	5%	50V
C234	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V
C235	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V
C236	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C237	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C238	1-126-099-11	ELECT 2.2MF	20%	35V
C239	1-135-083-00	TANTAL. CHIP 0.47MF	20%	25V
C240	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C241	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C242	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C243	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C244	1-124-967-11	ELECT 10MF	20%	10V
C245	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V
C246	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C247	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C248	1-163-121-00	CERAMIC CHIP 150PF	5%	50V
C249	1-163-809-91	CERAMIC CHIP 0.047MF	10%	25V
C252	1-135-093-91	TANTAL CHIP 10MF	20%	16V
C254	1-161-036-91	CERAMIC 0.047MF	20%	25V

CONNECTOR

Ref.No	Part No.	Description	Remark
CN301	*1-564-029-00	PIN, CONNECTOR 4P	
CN302	*1-564-016-51	PIN, CONNECTOR 6P	
CN303	*1-564-013-00	PIN, CONNECTOR 3P	
CN304	*1-564-012-00	PIN, CONNECTOR 2P	
CN305	*1-564-014-61	PIN, CONNECTOR 4P	
CN306	*1-564-012-61	PIN, CONNECTOR 2P	
CN307	1-562-887-11	CONNECTOR, F.P.C 20P	
CN308	*1-564-017-00	PIN, CONNECTOR 7P	
CN309	1-563-492-11	CONNECTOR, F.P.C 19P	
CN310	*1-564-014-00	PIN, CONNECTOR 4P	
CN311	*1-564-019-51	PIN, CONNECTOR 9P	
CN314	*1-564-012-81	PIN, CONNECTOR 2P	
CN501	1-563-492-11	CONNECTOR, F.P.C 19P	

DIODE

Ref.No	Part No.	Description	Remark
D151	8-719-941-86	DIODE DAN202UT	
D152	8-719-914-11	DIODE HZ4ALL	
D153	8-719-941-09	DIODE DAP202U	
D154	8-719-941-09	DIODE DAP202U	
D155	8-719-914-11	DIODE HZ4ALL	
D156	8-719-941-23	DIODE DA204U	
D157	8-719-941-23	DIODE DA204U	
D158	8-719-941-23	DIODE DA204U	
D159	8-719-941-23	DIODE DA204U	
D160	8-719-941-86	DIODE DAN202U	
D161	8-719-941-89	DIODE DA106U	
D162	8-719-941-23	DIODE DA204U	
D163	8-719-941-23	DIODE DA204U	

FILTER

Ref.No	Part No.	Description	Remark
FL151	1-235-612-21	BPF (16KHz)	
FL152	1-235-611-21	BPF (46KHz)	

IC

Ref.No	Part No.	Description	Remark
IC151	8-752-804-59	IC CXP5048H133QE	
IC152	8-752-805-16	IC CXP5046H-143Q	
IC153	8-759-925-43	IC MSM6411B-26GS-VK	
IC154	8-759-100-93	IC UPC393G2	
IC155	8-759-100-92	IC UPC4250G2	
IC156	8-759-100-93	IC UPC393G2	
IC157	8-759-922-54	IC S-81250AG	
IC158	8-759-937-56	IC S-8054ALB-LM-S	
IC159	8-759-107-68	IC CX20115A	
IC160	8-759-939-69	IC MB675121UPF	
IC161	8-752-003-50	IC CX20035	
IC162	8-759-928-56	IC CXA1042M	
IC163	8-759-701-36	IC NJM3403AM	
IC164	8-759-925-66	IC BA6303F	
IC165	8-759-932-64	IC BU4052BF	
IC166	8-759-932-54	IC BU4066BF	
IC167	8-759-701-01	IC NJM2904M	

COIL

Ref.No	Part No.	Description	Remark
L151	1-410-838-11	INDUCTOR 330UH	
L152	1-408-795-21	INDUCTOR CHIP 330UH	
L153	1-408-795-21	INDUCTOR CHIP 330UH	
L154	1-410-828-11	INDUCTOR 47UH	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
L155	1-410-838-11	INDUCTOR 330UH	
L156	1-410-828-11	INDUCTOR 47UH	
L157	1-408-795-21	INDUCTOR CHIP 330UH	
L158	1-408-948-00	INDUCTOR 220UH	
L159	1-408-948-00	INDUCTOR 220UH	

IC LINK

Ref.No	Part No.	Description	Remark
PS151	⚠1-532-605-00	LINK, IC ICP-N10 (0.4A)	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q151	8-729-602-21	TRANSISTOR 2SC4154	
Q152	8-729-602-36	TRANSISTOR 2SA1602	
Q153	8-729-602-21	TRANSISTOR 2SC4154	
Q154	8-729-905-12	TRANSISTOR DTA144EU	
Q155	8-729-602-36	TRANSISTOR 2SA1602	
Q156	8-729-602-21	TRANSISTOR 2SC4154	
Q157	8-729-602-36	TRANSISTOR 2SA1602	
Q158	8-729-905-12	TRANSISTOR DTA144EU	
Q159	8-729-905-18	TRANSISTOR DTC144EU	
Q160	8-729-602-21	TRANSISTOR 2SC4154	
Q161	8-729-602-36	TRANSISTOR 2SA1602	
Q162	8-729-905-12	TRANSISTOR DTA144EU	
Q163	8-729-905-12	TRANSISTOR DTA144EU	
Q166	8-729-905-18	TRANSISTOR DTC144EU	
Q167	8-729-905-18	TRANSISTOR DTC144EU	
Q168	8-729-905-99	TRANSISTOR DTC114TU	
Q169	8-729-905-99	TRANSISTOR DTC114TU	
Q170	8-729-905-99	TRANSISTOR DTC114TU	
Q171	8-729-905-12	TRANSISTOR DTA144EU	
Q172	8-729-905-12	TRANSISTOR DTA144EU	
Q173	8-729-905-99	TRANSISTOR DTC114TU	
Q174	8-729-905-12	TRANSISTOR DTA144EU	
Q175	8-729-905-99	TRANSISTOR DTC114TU	
Q176	8-729-905-18	TRANSISTOR DTC144EU	
Q177	8-729-602-21	TRANSISTOR 2SC4154	
Q178	8-729-905-18	TRANSISTOR DTC144EU	
Q179	8-729-602-21	TRANSISTOR 2SC4154	
Q180	8-729-602-21	TRANSISTOR 2SC4154	
Q181	8-729-602-36	TRANSISTOR 2SA1602	
Q182	8-729-105-29	TRANSISTOR 2SA1385	
Q183	8-729-602-21	TRANSISTOR 2SC4154	
Q184	8-729-602-21	TRANSISTOR 2SC4154	
Q185	8-729-602-36	TRANSISTOR 2SA1602	
Q186	8-729-109-42	TRANSISTOR 2SK94-X2	
Q187	8-729-109-42	TRANSISTOR 2SK94-X2	
Q188	8-729-905-12	TRANSISTOR DTA144EU	
Q189	8-729-905-12	TRANSISTOR DTA144EU	
Q190	8-729-905-57	TRANSISTOR DTA124EU	
Q191	8-729-905-96	TRANSISTOR DTA114TU	
Q192	8-729-904-04	TRANSISTOR FMS2	
Q193	8-729-903-82	TRANSISTOR FMW2	
Q194	8-729-905-12	TRANSISTOR DTA144EU	
Q195	8-729-905-18	TRANSISTOR DTC144EU	
Q196	8-729-905-18	TRANSISTOR DTC144EU	
Q197	8-729-905-18	TRANSISTOR DTC144EU	
Q198	8-729-905-99	TRANSISTOR DTC114TU	
Q199	8-729-602-36	TRANSISTOR 2SA1602	
Q200	8-729-905-18	TRANSISTOR DTC144EU	
Q201	8-729-159-64	TRANSISTOR 2SD596	
Q202	8-729-159-64	TRANSISTOR 2SD596	
Q203	8-729-602-21	TRANSISTOR 2SC4154	
Q204	8-729-602-36	TRANSISTOR 2SA1602	
Q205	8-729-602-21	TRANSISTOR 2SC4154	
Q206	8-729-602-36	TRANSISTOR 2SA1602	
Q207	8-729-905-12	TRANSISTOR DTA144EU	
Q208	8-729-905-18	TRANSISTOR DTC144EU	
Q209	8-729-905-12	TRANSISTOR DTA144EU	
Q210	8-729-905-12	TRANSISTOR DTA144EU	
Q211	8-729-905-18	TRANSISTOR DTC144EU	
Q212	8-729-905-18	TRANSISTOR DTC144EU	
Q213	8-729-905-18	TRANSISTOR DTC144EU	
Q214	8-729-109-42	TRANSISTOR 2SK94-X2	

RESISTOR

Ref.No	Part No.	Description	Remark
R151	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R152	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R153	1-216-015-00	METAL GLAZE 39 5% 1/10W	
R154	1-216-047-00	METAL GLAZE 820 5% 1/10W	
R155	1-216-029-00	METAL GLAZE 150 5% 1/10W	
R156	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R157	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R158	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R159	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R160	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R161	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R162	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R163	1-216-101-00	METAL GLAZE 150K 5% 1/10W	
R164	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R165	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R166	1-216-109-00	METAL GLAZE 330K 5% 1/10W	
R167	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R168	1-216-093-00	METAL GLAZE 68K 5% 1/10W	
R169	1-216-099-00	METAL GLAZE 120K 5% 1/10W	
R170	1-216-027-00	METAL GLAZE 120 5% 1/10W	
R171	1-216-047-00	METAL GLAZE 820 5% 1/10W	
R172	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R173	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R174	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R175	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R176	1-216-119-00	METAL GLAZE 820K 5% 1/10W	
R177	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R178	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R179	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R180	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R181	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R182	1-216-295-00	METAL GLAZE 0 5% 1/10W	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description				Remark
R183	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R184	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R185	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R186	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R187	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R188	1-216-119-00	METAL GLAZE	820K	5%	1/10W	
R189	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R190	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R191	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R192	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R193	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R194	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R195	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R196	1-216-107-00	METAL GLAZE	270K	5%	1/10W	
R197	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R198	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R199	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R200	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R201	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R202	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R203	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R204	1-216-103-00	METAL GLAZE	180K	5%	1/10W	
R205	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R206	1-216-129-00	METAL GLAZE	2.2M	5%	1/10W	
R207	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R208	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R209	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R210	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R211	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R212	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R213	1-216-119-00	METAL GLAZE	820K	5%	1/10W	
R214	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R215	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R216	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R217	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R218	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R219	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R221	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R222	1-216-123-11	METAL GLAZE	1.2M	5%	1/10W	
R223	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R224	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R225	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R226	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R227	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R228	1-216-115-00	METAL GLAZE	560K	5%	1/10W	
R229	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R230	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R231	1-216-099-00	METAL GLAZE	120K	5%	1/10W	
R232	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R233	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R234	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R235	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R236	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R240	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R241	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R242	1-216-174-00	METAL GLAZE	100	5%	1/8W	
R243	1-216-174-00	METAL GLAZE	100	5%	1/8W	
R244	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R245	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R247	1-216-099-00	METAL GLAZE	120K	5%	1/10W	
R248	1-216-099-00	METAL GLAZE	120K	5%	1/10W	
R249	1-216-099-00	METAL GLAZE	120K	5%	1/10W	
R250	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R251	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R252	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R253	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R254	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R255	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R256	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R257	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R258	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R259	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R260	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R261	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R262	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R263	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R264	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R265	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R266	1-216-194-00	METAL GLAZE	680	5%	1/8W	
R267	1-216-194-00	METAL GLAZE	680	5%	1/8W	
R268	1-216-194-00	METAL GLAZE	680	5%	1/8W	
R269	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R270	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R271	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R272	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R273	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R274	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R275	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R276	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R278	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R279	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R280	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R281	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R282	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R283	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R284	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R285	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R286	1-216-117-00	METAL GLAZE	680K	5%	1/10W	
R287	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R288	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R289	1-216-115-00	METAL GLAZE	560K	5%	1/10W	
R290	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R291	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R292	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R293	1-216-129-00	METAL GLAZE	2.2M	5%	1/10W	
R294	1-216-097-00	METAL GLAZE	100K	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R295	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R296	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R297	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R298	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R299	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R300	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R301	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R302	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R303	1-216-099-00	METAL GLAZE 120K 5% 1/10W	
R304	1-216-109-00	METAL GLAZE 330K 5% 1/10W	
R305	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R307	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R308	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R309	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R310	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R311	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R312	1-216-093-00	METAL GLAZE 68K 5% 1/10W	
R313	1-216-093-00	METAL GLAZE 68K 5% 1/10W	
R314	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R315	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R316	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R317	1-216-117-00	METAL GLAZE 680K 5% 1/10W	
R318	1-216-117-00	METAL GLAZE 680K 5% 1/10W	
R319	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R320	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R321	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R322	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R323	1-216-105-00	METAL GLAZE 220K 5% 1/10W	
R324	1-216-105-00	METAL GLAZE 220K 5% 1/10W	
R325	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R326	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R327	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R328	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R329	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R330	1-216-115-00	METAL GLAZE 560K 5% 1/10W	
R331	1-216-091-00	METAL GLAZE 56K 5% 1/10W	
R332	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R333	1-216-115-00	METAL GLAZE 560K 5% 1/10W	
R334	1-216-115-00	METAL GLAZE 560K 5% 1/10W	
R335	1-216-115-00	METAL GLAZE 560K 5% 1/10W	
R336	1-216-115-00	METAL GLAZE 560K 5% 1/10W	
R337	1-216-107-00	METAL GLAZE 270K 5% 1/10W	
R338	1-216-107-00	METAL GLAZE 270K 5% 1/10W	
R339	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R340	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R341	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R342	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R343	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R344	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R345	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R346	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R347	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R348	1-216-049-00	METAL GLAZE 1K 5% 1/10W	

Ref.No	Part No.	Description	Remark
R349	1-216-091-00	METAL GLAZE 56K 5% 1/10W	
R350	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R351	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R352	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R353	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R354	1-216-091-00	METAL GLAZE 56K 5% 1/10W	
R355	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R356	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R357	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R358	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R359	1-216-158-00	METAL GLAZE 22 5% 1/8W	
R360	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R361	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R362	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R363	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R364	1-216-099-00	METAL GLAZE 120K 5% 1/10W	
R365	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R366	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R367	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R368	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R369	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R370	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R371	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R372	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R373	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R374	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R375	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R376	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R377	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R378	1-249-429-11	CARBON 10K 5% 1/4W	

VARIABLE RESISTOR

RV151	1-230-867-11	RES, ADJ, METAL GLAZE 1K
RV152	1-230-873-11	RES, ADJ, METAL GLAZE 47K

W315	1-626-249-11	FP-108 FLEXIBLE BOARD
W502	*1-558-801-11	WIRE, FLAT TYPE 20P

CRYSTAL

X151	1-567-346-11	OSCILLATOR, CERAMIC (5MHz)
X152	1-567-346-11	OSCILLATOR, CERAMIC (5MHz)
X153	1-567-192-11	OSCILLATOR, CERAMIC (4MHz)

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*A-7061-118-A TS-80 BOARD, COMPLETE

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3-714-021-01 COVER, VR

CAPACITOR

C451	1-124-256-00	ELECT	1.5MF	20%	50V
C452	1-163-986-00	CERAMIC CHIP	0.027MF	10%	25V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
		CONNECTOR	
CN506	1-562-887-11	CONNECTOR, F.P.C 20P	
CN507	*1-564-018-51	PIN, CONNECTOR 8P	
CN508	*1-564-012-71	PIN, CONNECTOR 2P	
		IC	
IC451	8-759-701-39	IC NJM3404AM	
IC452	8-759-932-54	IC BU4066BF	
		TRANSISTOR	
Q451	8-729-700-11	NJL7141E-N	
Q452	8-729-905-18	TRANSISTOR DTC144EU	
Q453	8-729-109-42	TRANSISTOR 2SK94-X2	
		RESISTOR	
R451	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R452	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R453	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R454	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R455	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R456	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R457	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R458	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R459	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R460	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R461	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R462	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R463	1-216-099-00	METAL GLAZE 120K 5% 1/10W	
R464	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
		VARIABLE RESISTOR	
RV451	1-230-528-11	RES, ADJ, METAL GLAZE 220K	
RV452	1-230-524-11	RES, ADJ, METAL GLAZE 22K	
RV453	1-230-524-11	RES, ADJ, METAL GLAZE 22K	
RV454	1-230-524-11	RES, ADJ, METAL GLAZE 22K	
RV455	1-230-524-11	RES, ADJ, METAL GLAZE 22K	
RV456	1-230-528-11	RES, ADJ, METAL GLAZE 220K	
RV458	1-230-524-11	RES, ADJ, METAL GLAZE 22K	
RV459	1-230-523-11	RES, ADJ, METAL GLAZE 10K	

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Ref.No	Part No.	Description	Remark
	*A-7061-119-A	SK-22 BOARD, COMPLETE **********************	
	*3-712-579-01	HOLDER, LCD	
		CAPACITOR	
C301	1-135-096-21	TANTAL. CHIP 4.7MF 20%	10V
C303	1-163-033-00	CERAMIC CHIP 0.022MF	50V
C304	1-163-033-00	CERAMIC CHIP 0.022MF	50V
C305	1-163-033-00	CERAMIC CHIP 0.022MF	50V
C306	1-163-125-00	CERAMIC CHIP 220PF 5%	50V
C307	1-163-125-00	CERAMIC CHIP 220PF 5%	50V
C308	1-163-081-00	CERAMIC CHIP 0.22MF	25V
		DIODE	
D301	8-719-100-03	DIODE 1S2835	
D302	8-719-801-45	DIODE 1SS187	
D303	8-719-918-67	DIODE GL-1EG102 (VTR POWER)	
D304	**8-719-106-10**	**DIODE RD6.2M**	
		IC	
IC301	8-759-111-52	IC UPD7502G-376-12	
IC302	8-759-106-26	IC UPD4069UBG	
		DISPLAY PANEL	
ND301	1-807-613-21	DISPLAY PANEL, LIQUID CRYSTAL	
		TRANSISTOR	
Q301	8-729-901-01	TRANSISTOR DTC144EK	
Q302	8-729-901-01	TRANSISTOR DTC144EK	
Q303	8-729-901-01	TRANSISTOR DTC144EK	
		RESISTOR	
R601	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R602	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R603	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R604	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R605	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R606	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R607	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R608	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R609	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R610	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R611	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R612	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R613	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R614	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R615	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R616	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R618	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R619	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R620	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R621	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R622	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R623	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R624	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R625	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R626	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R627	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R628	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R629	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R630	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R631	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R632	1-216-121-00	METAL GLAZE 1M 5% 1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R634	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R635	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R636	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R637	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R638	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R639	1-216-295-00	METAL GLAZE 0 5% 1/10W	

SWITCH

S301	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (PAUSE ⏸)	
S302	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (REW ◀◀)	
S303	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (FF ▶▶)	
S304	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (STOP ■)	
S305	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (RESET)	
S306	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (MEMORY)	
S307	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (INSERT)	
S308	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (PLAY ▶)	
S309	1-553-977-00	SWITCH, SLIDE (REC MODE SP/LP)	
S310	1-553-977-00	SWITCH, SLIDE (EDIT)	
S311	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (VTR POWER)	
S312	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (FRAME ❚▶)	
S313	1-554-364-00	SWITCH, SLIDE (EJECT ⏏)	
S314	1-554-364-00	SWITCH, SLIDE (REC ●)	

CERAMIC

X301	1-527-532-00	OSCILLATOR, CERAMIC (400KHz)	

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*A-7061-120-A CC-13 BOARD, COMPLETE

CAPACITOR

C901	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C902	1-124-967-11	ELECT 10MF 20% 10V	
C903	1-124-967-11	ELECT 10MF 20% 10V	
C904	1-124-224-00	ELECT 47MF 20% 6.3V	
C905	1-124-462-00	ELECT 10MF 20% 10V	
C906	1-124-225-00	ELECT 100MF 20% 6.3V	
C907	1-124-222-00	ELECT 22MF 20% 6.3V	
C908	1-124-245-00	ELECT 4.7MF 20% 16V	
C909	1-124-462-00	ELECT 10MF 20% 10V	
C910	1-163-021-00	CERAMIC CHIP 0.01MF 50V	
C911	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
C912	1-124-577-11	ELECT 82MF 20% 10V	
C913	1-163-033-00	CERAMIC CHIP 0.022MF 50V	
C914	1-127-491-00	ELECT(SOLID) 22MF 20% 10V	
C915	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C916	1-127-498-00	ELECT(SOLID) 15MF 20% 16V	
C917	1-163-019-00	CERAMIC CHIP 0.0068MF 10% 50V	
C918	1-163-033-00	CERAMIC CHIP 0.022MF 50V	
C919	1-163-033-00	CERAMIC CHIP 0.022MF 50V	
C920	1-124-257-00	ELECT 2.2MF 20% 50V	
C921	1-163-135-00	CERAMIC CHIP 560PF 5% 50V	

Ref.No	Part No.	Description	Remark
C922	1-163-018-00	CERAMIC CHIP 0.0056MF 10% 50V	
C923	1-127-496-00	ELECT(SOLID) 6.8MF 20% 16V	
C924	1-163-033-00	CERAMIC CHIP 0.022MF 50V	
C925	1-124-577-11	ELECT 82MF 20% 10V	
C926	1-127-496-00	ELECT(SOLID) 6.8MF 20% 16V	
C927	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C928	1-163-133-00	CERAMIC CHIP 470PF 10% 50V	
C929	1-127-498-00	ELECT(SOLID) 15MF 20% 16V	
C930	1-163-019-00	CERAMIC CHIP 0.0068MF 10% 50V	
C931	1-124-257-00	ELECT 2.2MF 20% 50V	
C932	1-163-129-00	CERAMIC CHIP 330PF 5% 50V	
C933	1-102-121-00	CERAMIC 0.0022MF 10% 50V	

CONNECTOR

CN901	*1-564-012-81	PIN, CONNECTOR 2P	
CN902	*1-564-012-61	PIN, CONNECTOR 2P	
CN903	*1-564-016-00	PIN, CONNECTOR 6P	
CN904	*1-564-002-61	PIN, CONNECTOR 3P	
CN906	*1-564-002-00	PIN, CONNECTOR 3P	

DIODE

D901	8-719-938-75	DIODE SB05-05CP	
D902	8-719-938-75	DIODE SB05-05CP	
D903	8-719-105-84	DIODE RD5.1M-T1B1	
D904	8-719-106-71	DIODE RD12M-B2	

IC

IC901	8-752-009-51	IC CX20095A	
IC902	8-759-937-36	IC TL1451ACNS	

JACK

J901	1-563-469-11	JACK, PIN (MINIATURE) 2P	(ACCESSORY IN/OUT)

COIL

L901	1-410-625-11	COIL, CHOKE 33UH	
L902	1-410-627-11	COIL, CHOKE 100UH	
L903	1-421-902-11	COIL, CHOKE 120UH	
L904	1-421-902-11	COIL, CHOKE 120UH	
L905	1-410-828-11	INDUCTOR 47UH	

TRANSISTOR

Q901	8-729-901-03	TRANSISTOR DTC144WK	
Q902	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q903	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q904	8-729-901-03	TRANSISTOR DTC144WK	
Q905	8-729-901-03	TRANSISTOR DTC144WK	
Q906	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q907	8-729-117-54	TRANSISTOR 2SA1175	
Q908	8-729-901-03	TRANSISTOR DTC144WK	
Q909	8-729-805-25	TRANSISTOR 2SB1121	
Q910	8-729-807-33	TRANSISTOR 2SB1123	
Q911	8-729-100-67	TRANSISTOR 2SC1623-L7	

When indicating parts by reference number, please include the board name.

CC-13 PC-32

Ref.No	Part No.	Description	Remark
Q912	8-729-901-00	TRANSISTOR DTC124EK-T-96	
		RESISTOR	
R901	1-216-015-00	METAL GLAZE 39 5% 1/10W	
R902	1-216-015-00	METAL GLAZE 39 5% 1/10W	
R903	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R904	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R905	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R906	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R907	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R908	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R911	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R912	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R913	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R914	1-216-021-00	METAL GLAZE 68 5% 1/10W	
R915	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R916	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R917	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R918	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R920	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R921	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R922	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R923	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R924	1-216-105-00	METAL GLAZE 220K 5% 1/10W	
R925	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R926	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R927	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R928	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R929	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R930	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R931	1-216-105-00	METAL GLAZE 220K 5% 1/10W	
R932	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R933	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R934	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R935	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R936	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R937	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R938	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R939	1-216-101-00	METAL GLAZE 150K 5% 1/10W	
R940	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R941	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R942	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R943	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R944	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R945	1-216-025-00	METAL GLAZE 100 5% 1/10W	
		VARIABLE RESISTOR	
RV901	1-237-354-11	RES, VAR, CARBON 470K (FRAM ADJ)	
RV902	1-237-354-11	RES, VAR, CARBON 470K (STILL ADJ)	
RV903	1-230-867-11	RES, ADJ, METAL GLAZE 1K	
RV904	1-230-866-11	RES, ADJ, METAL GLAZE 470	

Ref.No	Part No.	Description	Remark
		SWITCH	
S901	1-554-672-00	SWITCH, SLIDE(AUDIO MONITOR PCM/MIX/STD)	
		TRANSFORMER	
T901	1-449-242-11	TRANSFORMER, CONVERTER	

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*A-7061-121-A PC-32 BOARD, COMPLETE
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*A-7061-122-A DA-6 BOARD, COMPLETE (HIC)

Ref.No	Part No.	Description	Remark
		CAPACITOR	
C001	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C002	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C003	1-124-255-00	ELECT 1MF 20% 50V	
C004	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C005	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C006	1-124-236-00	ELECT 47MF 20% 16V	
C007	1-124-462-00	ELECT 10MF 20% 16V	
C008	1-124-462-00	ELECT 10MF 20% 16V	
C010	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C022	1-163-013-00	CERAMIC CHIP 0.0022MF 10% 50V	
C025	1-124-255-00	ELECT 1MF 20% 50V	
C026	1-124-245-00	ELECT 4.7MF 20% 16V	
C028	1-124-255-00	ELECT 1MF 20% 50V	
C029	1-124-245-00	ELECT 4.7MF 20% 16V	
C030	1-124-245-00	ELECT 4.7MF 20% 16V	
C031	1-124-245-00	ELECT 4.7MF 20% 16V	
C032	1-163-013-00	CERAMIC CHIP 0.0022MF 10% 50V	
C033	1-163-013-00	CERAMIC CHIP 0.0022MF 10% 50V	
C034	1-163-013-00	CERAMIC CHIP 0.0022MF 10% 50V	
C035	1-163-013-00	CERAMIC CHIP 0.0022MF 10% 50V	
C036	1-124-245-00	ELECT 4.7MF 20% 16V	
C037	1-163-121-00	CERAMIC CHIP 150PF 5% 50V	
C038	1-162-587-91	CERAMIC CHIP 0.039MF 10% 25V	
C040	1-163-013-00	CERAMIC CHIP 0.0022MF 10% 50V	
C041	1-124-245-00	ELECT 4.7MF 20% 16V	
C042	1-163-121-00	CERAMIC CHIP 150PF 5% 50V	
C043	1-162-587-91	CERAMIC CHIP 0.039MF 10% 25V	
C045	1-135-100-21	TANTAL. CHIP 6.8MF 20% 6.3V	
C046	1-135-129-21	TANTAL. CHIP 68MF 20% 4V	
C047	1-135-101-21	TANTAL. CHIP 22MF 20% 6.3V	
C048	1-162-587-91	CERAMIC CHIP 0.039MF 10% 25V	
C049	1-163-125-00	CERAMIC CHIP 220PF 5% 50V	
C050	1-163-088-00	CERAMIC CHIP 5PF 0.25PF 50V	
C051	1-163-017-00	CERAMIC CHIP 0.0047MF 10% 50V	
C052	1-135-129-21	TANTAL. CHIP 68MF 20% 4V	
C053	1-163-020-00	CERAMIC CHIP 0.0082MF 10% 50V	
C054	1-135-099-00	TANTAL. CHIP 2.2MF 20% 6.3V	
C055	1-163-137-00	CERAMIC CHIP 680PF 5% 50V	
C056	1-135-104-00	TANTAL. CHIP 10MF 20% 4V	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark
C057	1-135-072-21	TANTAL. CHIP 0.22MF	20%	35V
C058	1-135-158-21	TANTAL. CHIP 15MF	20%	4V
C059	1-135-100-21	TANTAL. CHIP 6.8MF	20%	6.3V
C060	1-135-129-21	TANTAL. CHIP 68MF	20%	4V
C061	1-135-101-21	TANTAL. CHIP 22MF	20%	6.3V
C062	1-163-125-00	CERAMIC CHIP 220PF	5%	50V
C063	1-162-587-91	CERAMIC CHIP 0.039MF	10%	25V
C064	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C065	1-163-088-00	CERAMIC CHIP 5PF	0.25PF	50V
C066	1-135-099-00	TANTAL. CHIP 2.2MF	20%	6.3V
C067	1-163-020-00	CERAMIC CHIP 0.0082MF	10%	50V
C068	1-163-137-00	CERAMIC CHIP 680PF	5%	50V
C069	1-135-104-00	TANTAL. CHIP 10MF	20%	4V
C070	1-135-072-21	TANTAL. CHIP 0.22MF	20%	35V
C072	1-135-158-21	TANTAL. CHIP 15MF	20%	4V
C073	1-124-245-00	ELECT 4.7MF	20%	16V
C074	1-124-245-00	ELECT 4.7MF	20%	16V
C075	1-124-245-00	ELECT 4.7MF	20%	16V
C076	1-124-462-00	ELECT 10MF	20%	16V
C077	1-124-462-00	ELECT 10MF	20%	16V
C078	1-124-245-00	ELECT 4.7MF	20%	16V
C079	1-124-245-00	ELECT 4.7MF	20%	16V
C080	1-124-229-00	ELECT 33MF	20%	10V
C081	1-124-229-00	ELECT 33MF	20%	10V
C082	1-124-245-00	ELECT 4.7MF	20%	16V
C083	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C084	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C085	1-124-120-11	ELECT 220MF	20%	16V
C086	1-124-229-00	ELECT 33MF	20%	10V
C087	1-124-584-00	ELECT 100MF	20%	10V
C088	1-124-222-00	ELECT 22MF	20%	6.3V
C089	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C090	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C091	1-135-098-21	TANTAL. CHIP 47MF	20%	6.3V
C092	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C093	1-135-101-21	TANTAL. CHIP 22MF	20%	6.3V
C094	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C095	1-124-462-00	ELECT 10MF	20%	16V
C100	1-124-245-00	ELECT 4.7MF	20%	16V
C101	1-124-245-00	ELECT 4.7MF	20%	16V
C102	1-124-245-00	ELECT 4.7MF	20%	16V
C103	1-124-254-00	ELECT 0.68MF	20%	50V
C104	1-124-254-00	ELECT 0.68MF	20%	50V
C105	1-124-967-11	ELECT 10MF	20%	10V
C106	1-124-967-11	ELECT 10MF	20%	10V
C109	1-135-103-00	TANTAL. CHIP 3.3MF	20%	4V
C110	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C111	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C112	1-135-101-21	TANTAL. CHIP 22MF	20%	6.3V
C113	1-124-120-11	ELECT 220MF	20%	16V
C116	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C117	1-163-139-00	CERAMIC CHIP 820P	10%	50V
C118	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V

Ref.No	Part No.	Description		Remark
C120	1-163-139-00	CERAMIC CHIP 820P	10%	50V
C121	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C122	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C123	1-124-255-00	ELECT 1MF	20%	50V
C124	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C125	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C126	1-124-236-00	ELECT 47MF	20%	16V
C127	1-124-462-00	ELECT 10MF	20%	16V
C128	1-124-462-00	ELECT 10MF	20%	16V
C129	1-124-462-00	ELECT 10MF	20%	16V
C130	1-124-462-00	ELECT 10MF	20%	16V
C132	1-124-234-00	ELECT 22MF	20%	16V
C133	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C134	1-124-462-00	ELECT 10MF	20%	16V
C135	1-124-462-00	ELECT 10MF	20%	16V
C136	1-124-245-00	ELECT 4.7MF	20%	16V
C137	1-124-255-00	ELECT 1MF	20%	50V
C138	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C140	1-124-255-00	ELECT 1MF	20%	50V
C150	1-135-158-21	TANTAL. CHIP 15MF	20%	4V
C151	1-135-158-21	TANTAL. CHIP 15MF	20%	4V
C153	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C154	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C155	1-124-224-00	ELECT 47MF	20%	6.3V
C156	1-124-224-00	ELECT 47MF	20%	6.3V
C199	1-124-236-00	ELECT 47MF	20%	16V
C200	1-124-236-00	ELECT 47MF	20%	16V
C230	1-124-499-11	ELECT 1MF	20%	50V
C231	1-124-499-11	ELECT 1MF	20%	50V
C232	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C233	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C234	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C235	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C236	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C237	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C238	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C239	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C240	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C241	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C242	1-163-117-00	CERAMIC CHIP 100PF	5%	50V

CONNECTOR

Ref.No	Part No.	Description
CN001	1-566-525-11	CONNECTOR, FPC (ZIF) 9P
CN002	1-566-530-11	CONNECTOR, FPC (ZIF) 14P
CN003	*1-564-003-00	PIN, CONNECTOR 4P
CN004	*1-564-017-00	PIN, CONNECTOR 7P
CN005	*1-564-014-61	PIN, CONNECTOR 4P
CN006	*1-564-013-00	PIN, CONNECTOR 3P
CN007	*1-564-001-11	PIN, CONNECTOR 2P
CN008	*1-564-012-71	PIN, CONNECTOR 2P
CN011	*1-564-004-00	PIN, CONNECTOR 5P
CN012	*1-564-005-00	PIN, CONNECTOR 6P
CN013	*1-564-002-00	PIN, CONNECTOR 3P

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description	Remark
*CN014	*1-564-004-00	PIN, CONNECTOR 5P	
CN030	*1-564-001-61	PIN, CONNECTOR 2P	
CN031	*1-564-003-00	PIN, CONNECTOR 4P	
		DIODE	
D001	8-719-100-05	DIODE 1S2837	
D002	8-719-100-05	DIODE 1S2837	
D003	8-719-100-05	DIODE 1S2837	
D004	8-719-100-03	DIODE 1S2835	
D005	8-719-100-05	DIODE 1S2837	
D006	8-719-100-03	DIODE 1S2835	
D007	8-719-100-03	DIODE 1S2835	
D008	8-719-100-05	DIODE 1S2837	
D009	8-719-100-05	DIODE 1S2837	
D012	8-719-801-45	DIODE 1SS187	
D013	8-719-101-23	DIODE 1SS123	
D014	8-719-101-23	DIODE 1SS123	
D015	8-719-801-45	DIODE 1SS187	
D020	8-719-100-05	DIODE 1S2837	
D050	8-719-100-05	DIODE 1S2837	
D051	8-719-801-50	DIODE 1SS193	
D121	8-719-101-23	DIODE 1SS123	
		FILTER	
FL001	1-236-109-11	FILTER, LOW PASS	
FL002	1-236-109-11	FILTER, LOW PASS	
FL003	1-236-043-11	FILTER, LOW PASS	
FL004	1-236-043-11	FILTER, LOW PASS	
		IC	
IC002	8-759-603-27	IC M5201FP	
IC004	8-759-701-24	IC NJM3414M	
IC005	8-759-603-27	IC M5201FP	
IC006	8-759-603-27	IC M5201FP	
IC007	8-759-603-27	IC M5201FP	
IC008	8-759-603-27	IC M5201FP	
IC009	8-759-603-27	IC M5201FP	
IC010	8-759-603-27	IC M5201FP	
IC011	8-752-009-90	IC CX20099	
IC012	8-752-017-60	IC CX20176	
IC014	8-759-961-38	IC BA6138	
IC015	8-759-701-01	IC NJM2904M	
IC016	8-757-991-00	IC CX-7991	
IC020	8-759-700-43	IC NJM4558M	
IC021	8-759-700-43	IC NJM4558M	
		JACK	
J001	1-507-797-21	JACK, LARGE TYPE (MIC L/R)	
		COIL	
L001	1-408-789-21	INDUCTOR CHIP 100UH	
L002	1-408-783-00	INDUCTOR CHIP 33UH	
L003	1-408-783-00	INDUCTOR CHIP 33UH	
L004	1-410-421-11	INDUCTOR 15UH	
		IC LINK	
PS001	⚠1-532-933-11	LINK, IC PSM-250 (0.25A)	
		TRANSISTOR	
Q003	8-729-901-01	TRANSISTOR DTC144EK	
Q004	8-729-904-07	TRANSISTOR FMG2	
Q005	8-729-904-07	TRANSISTOR FMG2	
Q006	8-729-904-07	TRANSISTOR FMG2	
Q007	8-729-901-01	TRANSISTOR DTC144EK	
Q009	8-729-100-76	TRANSISTOR 2SA812	
Q010	8-729-901-06	TRANSISTOR DTA144EK	
Q011	8-729-901-01	TRANSISTOR DTC144EK	
Q012	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q013	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q014	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q015	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q016	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q017	8-729-901-01	TRANSISTOR DTC144EK	
Q018	8-729-900-98	TRANSISTOR DTC143TK	
Q019	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q020	8-729-901-01	TRANSISTOR DTC144EK	
Q021	8-729-162-44	TRANSISTOR 2SB624-BV4	
Q022	8-729-903-10	TRANSISTOR FMW1	
Q023	8-729-901-01	TRANSISTOR DTC144EK	
Q024	8-729-901-01	TRANSISTOR DTC144EK	
Q025	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q026	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q027	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q028	8-729-901-01	TRANSISTOR DTC144EK	
Q029	8-729-903-10	TRANSISTOR FMW1	
Q030	8-729-109-43	TRANSISTOR 2SK94-X3	
Q031	8-729-109-43	TRANSISTOR 2SK94-X3	
		RESISTOR	
R001	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R002	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R003	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R004	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R005	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R006	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R007	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R008	1-216-109-00	METAL GLAZE 330K 5% 1/10W	
R009	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R010	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R011	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R012	1-216-093-00	METAL GLAZE 68K 5% 1/10W	
R013	1-216-127-11	METAL GLAZE 1.8M 5% 1/10W	
R015	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R016	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R017	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R019	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R020	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R023	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R024	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R025	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R026	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R027	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R028	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R029	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R031	1-216-103-00	METAL GLAZE	180K	5%	1/10W	
R032	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R033	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R034	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R035	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R036	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R038	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R039	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R040	1-216-103-00	METAL GLAZE	180K	5%	1/10W	
R041	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R042	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R043	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R044	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R045	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R046	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R047	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R048	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R049	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R050	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R051	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R052	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R053	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R054	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R055	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R056	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R057	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R058	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R059	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R060	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R061	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R062	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R063	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R064	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R065	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R066	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R067	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R068	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R069	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R070	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R071	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R072	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R073	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R074	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R075	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R076	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R077	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R078	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R079	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R080	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R081	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R082	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R083	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R084	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R085	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R086	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R087	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R088	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R089	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R090	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R091	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R092	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R093	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R094	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R095	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R096	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R097	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R098	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R099	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R100	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R101	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R102	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R103	1-216-019-00	METAL GLAZE	56	5%	1/10W	
R104	1-216-019-00	METAL GLAZE	56	5%	1/10W	
R105	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R106	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R107	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R108	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R109	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R110	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R111	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R112	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R113	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R114	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R115	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R116	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R117	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R118	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R119	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R120	1-216-035-00	METAL GLAZE	270	5%	1/10W	
R121	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R122	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R123	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R124	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R126	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R127	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R128	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R129	1-216-073-00	METAL GLAZE	10K	5%	1/10W	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description				Remark
R132	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R133	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R138	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R139	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R140	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R141	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R142	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R143	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R144	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R145	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R146	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R147	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R148	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R149	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R150	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R151	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R152	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R153	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R154	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R155	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R158	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R159	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R160	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R161	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R164	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R165	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R166	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R167	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R168	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R169	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R170	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R171	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R172	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R173	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R174	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R175	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R176	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R177	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R180	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R181	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R182	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R183	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R184	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R185	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R186	1-216-129-00	METAL GLAZE	2.2M	5%	1/10W	
R187	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R188	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R189	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R190	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R191	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R192	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R193	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R194	1-216-073-00	METAL GLAZE	10K	5%	1/10W	

Ref.No	Part No.	Description				Remark
R195	1-216-129-00	METAL GLAZE	2.2M	5%	1/10W	
R196	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R197	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R198	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R200	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R201	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R202	1-216-133-00	METAL GLAZE	3.3M	5%	1/10W	
R203	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R204	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R205	1-216-133-00	METAL GLAZE	3.3M	5%	1/10W	
R206	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R207	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R208	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R209	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R220	1-216-019-00	METAL GLAZE	56	5%	1/10W	
R230	1-216-115-00	METAL GLAZE	560K	5%	1/10W	
R231	1-216-115-00	METAL GLAZE	560K	5%	1/10W	
R271	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R272	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R273	1-216-097-00	METAL GLAZE	100K	5%	1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description
RV002	1-230-870-11	RES, ADJ, METAL GLAZE 10K
RV003	1-230-870-11	RES, ADJ, METAL GLAZE 10K

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*A-7061-123-A VC-36 BOARD, COMPLETE

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CAPACITOR

Ref.No	Part No.	Description			
C101	1-124-258-00	ELECT	3.3MF	20%	50V
C102	1-124-258-00	ELECT	3.3MF	20%	50V
C103	1-124-944-11	ELECT	82MF	20%	25V
C104	1-163-013-00	CERAMIC CHIP	0.0022MF	10%	50V
C106	1-163-013-00	CERAMIC CHIP	0.0022MF	10%	50V
C107	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C108	1-124-224-00	ELECT	47MF	20%	6.3V
C109	1-163-013-00	CERAMIC CHIP	0.0022MF	10%	50V
C110	1-162-638-11	CERAMIC CHIP	1MF		16V
C111	1-124-247-00	ELECT	10MF	20%	25V
C112	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C113	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C114	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C115	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C116	1-124-247-00	ELECT	10MF	20%	35V
C117	1-124-247-00	ELECT	10MF	20%	35V
C118	1-124-258-00	ELECT	3.3MF	20%	35V
C120	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C127	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C128	1-163-145-00	CERAMIC CHIP	0.0015MF	10%	50V
C131	1-124-224-00	ELECT	47MF	20%	6.3V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark
C132	1-163-081-00	CERAMIC CHIP 0.22MF		25V
C133	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C134	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C135	1-124-638-11	ELECT 22MF	20%	6.3V
C138	1-124-638-11	ELECT 22MF	20%	6.3V
C151	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V
C152	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V
C153	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V
C154	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V
C155	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C156	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C157	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C158	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C163	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V
C164	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V
C165	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V
C166	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V
C167	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V
C168	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V
C169	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V
C170	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V
C171	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V
C172	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V
C173	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V
C174	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V
C181	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V
C182	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C183	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C301	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C302	1-163-077-00	CERAMIC CHIP 0.1MF		50V
C303	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C304	1-124-638-11	ELECT 22MF	20%	6.3V
C305	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C307	1-163-121-00	CERAMIC CHIP 150PF	5%	50V
C308	1-163-125-00	CERAMIC CHIP 220PF	5%	50V
C309	1-163-107-00	CERAMIC CHIP 39PF	5%	50V
C310	1-163-107-00	CERAMIC CHIP 39PF	5%	50V
C311	1-163-125-00	CERAMIC CHIP 220PF	5%	50V
C312	1-163-121-00	CERAMIC CHIP 150PF	5%	50V
C380	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C381	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C382	1-124-287-00	ELECT 10MF	20%	10V
C383	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C384	1-123-661-00	ELECT 100MF	20%	6.3V

CONNECTOR

Ref.No	Part No.	Description	Remark
CN101	1-566-539-11	CONNECTOR, FPC (NON ZIF) 7P	
CN102	*1-564-015-00	PIN, CONNECTOR 5P	
CN103	1-566-541-11	CONNECTOR, FPC (NON ZIF) 9P	

DIODE

Ref.No	Part No.	Description	Remark
D101	8-719-100-05	DIODE 1S2837	
D102	8-719-100-03	DIODE 1S2835	
D103	8-719-100-05	DIODE 1S2837	
D104	8-719-100-05	DIODE 1S2837	
D105	8-719-100-03	DIODE 1S2835	
D106	8-719-100-03	DIODE 1S2835	
D107	8-719-100-05	DIODE 1S2837	
D131	8-719-100-03	DIODE 1S2835	
D132	8-719-100-05	DIODE 1S2837	
D133	8-719-100-05	DIODE 1S2837	

IC

Ref.No	Part No.	Description	Remark
IC101	8-750-010-89	IC IU024AK-11A CCD IMAGER	
IC102	8-752-324-14	IC CXD1141M	
IC103	8-759-103-03	IC UPD6107G	
IC104	8-759-100-95	IC UPC324G2	
IC105	8-759-103-25	IC UPD4053BG	
IC301	8-752-032-48	IC CXA1157M	

COIL

Ref.No	Part No.	Description		Remark
L101	1-408-978-21	INDUCTOR	47UH	
L102	1-407-169-XX	INDUCTOR	100UH	
L151	1-408-960-21	INDUCTOR	1.5UH	
L152	1-408-960-21	INDUCTOR	1.5UH	
L153	1-408-960-21	INDUCTOR	1.5UH	
L154	1-410-337-11	INDUCTOR	1UH	
L155	1-410-371-21	INDUCTOR CHIP	1.5UH	
L301	1-408-978-21	INDUCTOR	47UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q101	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q102	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q103	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q104	8-729-105-53	TRANSISTOR 2SK300	
Q105	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q106	8-729-100-76	TRANSISTOR 2SA812	
Q107	8-729-104-26	TRANSISTOR 2SB804-AW	
Q108	8-729-103-72	TRANSISTOR 2SD1005	
Q110	8-729-900-53	TRANSISTOR DTC114EK	
Q121	8-729-100-76	TRANSISTOR 2SA812	
Q132	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q133	8-729-100-76	TRANSISTOR 2SA812	
Q136	8-729-100-76	TRANSISTOR 2SA812	
Q137	8-729-100-76	TRANSISTOR 2SA812	
Q138	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q139	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q143	8-729-901-01	TRANSISTOR DTC144EK	
Q144	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q301	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q302	8-729-100-76	TRANSISTOR 2SA812	
Q303	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q304	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q305	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q306	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q307	8-729-100-67	TRANSISTOR 2SC1623-L7	

The IC101 and IC002 have not been mounted on the already mounted VC-36 board and DT-62 board respectively. Be sure to read "Precautions for Replacement of CCD Imager" on page 100. When changing the mounted VC-36 board and CCD Imager.

When indicating parts by reference number, please include the board name.

VC-36

Ref.No	Part No.	Description	Remark
Q308	8-729-100-76	TRANSISTOR 2SA812	
Q380	8-729-100-76	TRANSISTOR 2SA812	
Q381	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q382	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q383	8-729-100-76	TRANSISTOR 2SA812	
Q384	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q386	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q387	8-729-100-67	TRANSISTOR 2SC1623-L7	

RESISTOR

Ref.No	Part No.	Description				Remark
R101	1-216-107-00	METAL GLAZE	270K	5%	1/10W	
R102	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R103	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R104	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R105	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R106	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R107	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R108	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R109	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R110	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R111	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R112	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R113	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R114	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R115	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R116	1-216-154-00	METAL GLAZE	15	5%	1/8W	
R117	1-216-154-00	METAL GLAZE	15	5%	1/8W	
R118	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R119	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R120	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R121	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R122	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R123	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R124	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R125	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R126	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R127	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R128	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R132	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R135	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R136	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R137	1-216-107-00	METAL GLAZE	270K	5%	1/10W	
R139	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R140	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R141	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R142	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R143	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R145	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R146	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R147	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R148	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R149	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R150	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R151	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R152	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R153	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R154	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R155	1-216-117-00	METAL GLAZE	680K	5%	1/10W	
R156	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R157	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R158	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R161	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R162	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R163	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R164	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R172	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R173	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R175	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R176	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R177	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R178	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R192	1-216-103-00	METAL GLAZE	180K	5%	1/10W	
R194	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R301	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R302	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R303	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R304	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R305	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R306	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R307	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R308	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R309	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R310	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R311	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R312	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R313	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R314	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R315	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R317	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R318	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R319	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R320	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R321	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R322	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R323	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R324	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R325	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R326	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R327	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R328	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R329	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R330	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R331	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R332	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R333	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R380	1-216-081-00	METAL GLAZE	22K	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
R381	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R382	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R383	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R384	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R385	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R386	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R388	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R389	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W
R390	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R391	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W
R392	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W
R393	1-216-049-00	METAL GLAZE	1K	5%	1/10W

VARIABLE RESISTOR

Ref.No	Part No.	Description
RV101	1-230-498-11	RES, ADJ, METAL GLAZE 47K
RV301	1-230-497-11	RES, ADJ, METAL GLAZE 22K

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*A-7061-124-A VC-37 BOARD, COMPLETE
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A-7068-082-A DT-62 BOARD, COMPLETE (HIC201)

A-7068-126-A CP-21 BOARD, COMPLETE (HIC251)

CAPACITOR

Ref.No	Part No.	Description			Remark
C201	1-124-222-00	ELECT	22MF	20%	6.3V
C202	1-124-236-00	ELECT	47MF	20%	10V
C203	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C204	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C205	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C206	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C207	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C208	1-163-089-00	CERAMIC CHIP	6PF	0.5PF	50V
C209	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C210	1-124-257-00	ELECT	2.2MF	20%	50V
C211	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C212	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C213	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C215	1-162-638-11	CERAMIC CHIP	1MF		16V
C216	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C217	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C218	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C219	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C220	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C221	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C240	1-124-224-00	ELECT	47MF	20%	6.3V
C256	1-124-224-00	ELECT	47MF	20%	6.3V
C257	1-124-462-00	ELECT	10MF	20%	6.3V
C258	1-163-059-00	CERAMIC CHIP	0.01MF	10%	50V
C259	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C260	1-124-462-00	ELECT	10MF	20%	6.3V
C261	1-124-462-00	ELECT	10MF	20%	6.3V
C262	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C263	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C264	1-124-224-00	ELECT	47MF	20%	6.3V
C265	1-135-091-00	TANTAL. CHIP	1MF	20%	16V
C267	1-135-091-00	TANTAL. CHIP	1MF	20%	16V
C268	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C269	1-163-081-00	CERAMIC CHIP	0.22MF		25V
C270	1-135-091-00	TANTAL. CHIP	1MF	20%	16V
C271	1-135-091-00	TANTAL. CHIP	1MF	20%	16V
C272	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C273	1-162-638-11	CERAMIC CHIP	1MF		16V
C274	1-162-638-11	CERAMIC CHIP	1MF		16V
C275	1-162-638-11	CERAMIC CHIP	1MF		16V
C276	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C277	1-163-107-00	CERAMIC CHIP	39PF	5%	50V
C278	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C279	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C280	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C281	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C282	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C283	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C341	1-124-566-11	ELECT	120MF	20%	6.3V
C342	1-135-091-00	TANTAL. CHIP	1MF	20%	16V
C343	1-162-638-11	CERAMIC CHIP	1MF		16V
C344	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C346	1-124-222-00	ELECT	22MF	20%	6.3V
C347	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C348	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C349	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C350	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C351	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C352	1-162-637-11	CERAMIC CHIP	0.47MF		16V
C354	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C355	1-135-091-00	TANTAL. CHIP	1MF	20%	16V
C356	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C357	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C358	1-162-637-11	CERAMIC CHIP	0.47MF		16V
C359	1-163-077-00	CERAMIC CHIP	0.1MF		50V
C360	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C361	1-163-013-00	CERAMIC CHIP	0.0022MF	10%	50V
C362	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C370	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C371	1-163-033-00	CERAMIC CHIP	0.022MF		50V

CONNECTOR

Ref.No	Part No.	Description
CN201	*1-564-013-00	PIN, CONNECTOR 3P
CN202	*1-564-012-00	PIN, CONNECTOR 2P

TRIMMER

Ref.No	Part No.	Description
CT201	1-141-331-11	CAP, VAR, TRIMMER (CHIP) 30PF
CT202	1-141-347-11	CAP, VAR, TRIMMER (CHIP) 10PF

When indicating parts by reference number, please include the board name.

VC-37

DIODE

Ref.No	Part No.	Description	Remark
D201	8-713-220-00	DIODE 1T32-2	
D251	8-719-100-05	DIODE 1S2837	
D252	8-719-100-05	DIODE 1S2837	

DELAY LINE

Ref.No	Part No.	Description	Remark
DL341	1-415-448-21	DELAY LINE	

IC

Ref.No	Part No.	Description	Remark
IC201	8-752-321-16	IC CXD1030M	
IC251	8-752-031-96	IC CXA1070Q-Z	
IC352	8-752-031-97	IC CXA1072Q-Z	

COIL

Ref.No	Part No.	Description		Remark
L201	1-408-970-21	INDUCTOR	10UH	
L202	1-410-389-11	INDUCTOR CHIP	47UH	
L203	1-408-970-21	INDUCTOR	10UH	
L341	1-408-960-21	INDUCTOR	1.5UH	
L342	1-410-393-11	INDUCTOR CHIP	100UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q201	8-729-175-72	TRANSISTOR 2SC2757-T33	
Q202	8-729-175-73	TRANSISTOR 2SC2757	
Q203	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q258	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q259	8-729-100-76	TRANSISTOR 2SA812	
Q260	8-729-100-76	TRANSISTOR 2SA812	
Q261	8-729-100-76	TRANSISTOR 2SA812	
Q263	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q342	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q348	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q349	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q350	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q351	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q352	8-729-100-76	TRANSISTOR 2SA812	
Q353	8-729-100-76	TRANSISTOR 2SA812	

RESISTOR

Ref.No	Part No.	Description				Remark
R203	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R204	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R205	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R206	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R207	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R208	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R209	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R211	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R212	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R214	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R215	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R217	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R218	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R219	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R220	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R221	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R222	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R223	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R224	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R225	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R228	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R259	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R260	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R265	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R266	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R267	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R268	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R269	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R270	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R271	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R272	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R273	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R274	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R275	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R276	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R277	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R278	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R279	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R280	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R281	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R282	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R283	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R284	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R285	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R286	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R287	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R289	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R290	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R291	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R292	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R293	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R296	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R297	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R298	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R299	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R341	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R342	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R343	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R344	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R345	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R346	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R347	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R348	1-216-134-00	METAL GLAZE	2.2	5%	1/8W	
R351	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R353	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R354	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R355	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R356	1-216-079-00	METAL GLAZE	18K	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R358	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R359	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R360	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R362	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R363	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R364	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R365	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W
R366	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R367	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R371	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R372	1-216-051-00	METAL GLAZE 1.2K 5%	1/10W
R373	1-216-055-00	METAL GLAZE 1.8K 5%	1/10W
R374	1-216-045-00	METAL GLAZE 680 5%	1/10W
R375	1-216-069-00	METAL GLAZE 6.8K 5%	1/10W
R376	1-216-041-00	METAL GLAZE 470 5%	1/10W
R377	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R378	1-216-049-00	METAL GLAZE 1K 5%	1/10W

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV252	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
RV253	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV254	1-230-870-11	RES, ADJ, METAL GLAZE 10K	
RV255	1-230-871-11	RES, ADJ, METAL GLAZE 22K	
RV341	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV342	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV343	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV344	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV345	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV346	1-230-871-11	RES, ADJ, METAL GLAZE 22K	
RV347	1-230-871-11	RES, ADJ, METAL GLAZE 22K	

CRYSTAL

Ref.No	Part No.	Description	Remark
X201	1-567-932-21	VIBRATOR, CRYSTAL (28.3750MHz)	
X202	1-567-733-11	VIBRATOR, CRYSTAL (17.7MHz)	

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*A-7061-125-A FC-15 BOARD, COMPLETE
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CAPACITOR

Ref.No	Part No.	Description	Remark
C701	1-124-222-00	ELECT 22MF 20%	6.3V
C702	1-163-105-00	CERAMIC CHIP 33PF 5%	50V
C703	1-124-222-00	ELECT 22MF 20%	6.3V
C704	1-163-093-00	CERAMIC CHIP 10PF 5%	50V
C705	1-162-638-11	CERAMIC CHIP 1MF	16V
C706	1-124-257-00	ELECT 2.2MF 20%	35V
C707	1-124-222-00	ELECT 22MF 20%	6.3V
C708	1-163-021-00	CERAMIC CHIP 0.01MF 10%	50V
C709	1-124-257-00	ELECT 2.2MF 20%	35V
C710	1-135-070-00	TANTAL. CHIP 0.1MF 20%	35V
C711	1-124-258-00	ELECT 3.3MF 20%	25V
C712	1-135-091-00	TANTAL. CHIP 1MF 20%	16V
C713	1-162-638-11	CERAMIC CHIP 1MF	16V
C714	1-162-638-11	CERAMIC CHIP 1MF	16V
C715	1-163-129-00	CERAMIC CHIP 330PF 5%	50V
C716	1-163-021-00	CERAMIC CHIP 0.01MF 10%	50V
C717	1-163-129-00	CERAMIC CHIP 330PF 5%	50V
C718	1-163-015-00	CERAMIC CHIP 0.0033MF 10%	50V
C719	1-163-119-00	CERAMIC CHIP 120PF 5%	50V
C720	1-102-110-00	CERAMIC 220PF 10%	50V
C771	1-163-035-00	CERAMIC CHIP 0.047MF	50V
C772	1-163-037-11	CERAMIC CHIP 0.022MF 10%	25V

CONNECTOR

Ref.No	Part No.	Description	Remark
CN701	*1-564-012-71	PIN, CONNECTOR 2P	
CN702	*1-564-013-00	PIN, CONNECTOR 3P	
CN703	*1-564-017-00	PIN, CONNECTOR 7P	
CN704	*1-564-015-00	PIN, CONNECTOR 5P	
CN705	*1-564-014-71	PIN, CONNECTOR 4P	

TRIMMER

Ref.No	Part No.	Description	Remark
CT701	1-141-331-11	CAP, VAR, TRIMMER (CHIP) (30PF)	

DIODE

Ref.No	Part No.	Description	Remark
D701	8-719-100-05	DIODE 1S2837	
D702	8-719-100-05	DIODE 1S2837	
D703	8-719-100-05	DIODE 1S2837	
D704	8-719-100-05	DIODE 1S2837	
D705	8-719-100-05	DIODE 1S2837	
D706	8-719-920-80	DIODE GL-1HY (INTERVAL REC)	
D707	8-719-918-67	DIODE GL-1EG102 (CAMERA POWER)	
D708	⚠8-719-938-72	DIODE SB01-05CP	
D709	⚠8-719-938-72	DIODE SB01-05CP	
D710	8-719-921-19	DIODE 1SS119TG	

IC

Ref.No	Part No.	Description	Remark
IC701	8-759-112-03	IC UPD7508G-769-00	
IC702	8-759-100-97	IC UPC339G2	
IC703	8-759-100-95	IC UPC324G2	
IC704	8-759-106-40	IC UPD4538BG	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q701	8-729-100-76	TRANSISTOR 2SA812	
Q702	8-729-900-98	TRANSISTOR DTC143TK	
Q703	8-729-900-98	TRANSISTOR DTC143TK	
Q704	8-729-901-01	TRANSISTOR DTC144EK	
Q705	8-729-901-01	TRANSISTOR DTC144EK	
Q706	8-729-100-76	TRANSISTOR 2SA812	
Q708	8-729-100-76	TRANSISTOR 2SA812	
Q709	8-729-901-03	TRANSISTOR DTC144WK	
Q710	8-729-100-76	TRANSISTOR 2SA812	
Q711	8-729-100-76	TRANSISTOR 2SA812	
Q712	8-729-900-99	TRANSISTOR DTA144WK	
Q713	8-729-900-98	TRANSISTOR DTC143TK	
Q714	8-729-100-76	TRANSISTOR 2SA812	
Q715	8-729-901-06	TRANSISTOR DTA144EK	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
Q718	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q719	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q720	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q771	8-729-100-67	TRANSISTOR 2SC1623-L7	

RESISTOR

Ref.No	Part No.	Description	Remark
R701	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R702	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R703	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R704	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R705	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R706	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R707	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R708	1-216-095-00	METAL GLAZE 82K 5% 1/10W	
R709	1-216-101-00	METAL GLAZE 150K 5% 1/10W	
R710	1-216-109-00	METAL GLAZE 330K 5% 1/10W	
R711	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R712	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R713	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R714	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R716	1-216-105-00	METAL GLAZE 220K 5% 1/10W	
R717	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R718	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R719	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R720	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R721	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R722	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R723	1-216-109-00	METAL GLAZE 330K 5% 1/10W	
R724	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R725	1-216-093-00	METAL GLAZE 68K 5% 1/10W	
R726	1-216-129-00	METAL GLAZE 2.2M 5% 1/10W	
R727	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R729	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R730	1-216-117-00	METAL GLAZE 680K 5% 1/10W	
R731	1-216-101-00	METAL GLAZE 150K 5% 1/10W	
R732	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R733	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R734	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R735	1-216-099-00	METAL GLAZE 120K 5% 1/10W	
R736	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R737	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R738	1-216-336-11	METAL GLAZE 47K 1% 1/10W	
R739	1-216-332-11	METAL GLAZE 11K 1% 1/10W	
R740	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R741	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R742	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R743	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R744	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R745	1-216-103-00	METAL GLAZE 180K 5% 1/10W	
R746	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R748	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R749	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R750	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
R751	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R752	1-216-518-00	METAL GLAZE 2.2K 1% 1/10W	
R753	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R754	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R755	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R760	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R761	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R762	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R764	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R765	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R766	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R767	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R771	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R772	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R773	1-249-429-11	CARBON 10K 5% 1/4W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV701	1-230-874-11	RES, ADJ, METAL GLAZE 100K	
RV702	1-230-874-11	RES, ADJ, METAL GLAZE 100K	
RV703	1-230-874-11	RES, ADJ, METAL GLAZE 100K	

SWITCH

Ref.No	Part No.	Description	Remark
S701	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (NEXT)	
S702	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (⊟)	
S703	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (⊞)	
S704	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (TITLE CLEAR)	
S705	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (INTERVAL REC)	
S706	1-554-364-00	SWITCH, SLIDE (CAMERA POWER)	

CRYSTAL

Ref.No	Part No.	Description	Remark
X701	1-527-997-00	VIBRATOR, CRYSTAL	

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*A-7061-126-A CG-2 BOARD, COMPLETE
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CAPACITOR

Ref.No	Part No.	Description	Remark
C801	1-124-222-00	ELECT 22MF 20% 6.3V	
C802	1-124-462-00	ELECT 10MF 20% 6.3V	
C803	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C804	1-163-105-00	CERAMIC CHIP 33PF 5% 50V	
C807	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C808	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C809	1-163-109-00	CERAMIC CHIP 47PF 5% 50V	
C810	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C811	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C812	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C815	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C816	1-163-033-00	CERAMIC CHIP 0.022MF 50V	
C817	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C821	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C822	1-162-638-11	CERAMIC CHIP 1MF 16V	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
C823	1-162-638-11	CERAMIC CHIP 1MF	16V

CONNECTOR

Ref.No	Part No.	Description	Remark
CN802	*1-564-014-51	PIN, CONNECTOR 4P	

TRIMMER

Ref.No	Part No.	Description	Remark
CT801	1-141-331-11	CAP, VAR, TRIMMER (CHIP) (30PF)	

DIODE

Ref.No	Part No.	Description	Remark
D801	8-719-100-05	DIODE 1S2837	
D802	8-719-100-05	DIODE 1S2837	
D803	8-719-100-05	DIODE 1S2837	
D805	8-719-100-03	DIODE 1S2835	
D806	8-719-100-03	DIODE 1S2835	
D807	8-719-100-03	DIODE 1S2835	

IC

Ref.No	Part No.	Description	Remark
IC801	8-759-009-54	IC MC14543BF	
IC802	8-759-106-63	IC UPD74HC02G	
IC803	8-759-107-89	IC UPD6105G-102	
IC804	8-759-106-89	IC UPD74HC157G	
IC805	8-759-100-96	IC UPD74HC174G	
IC806	8-759-107-89	IC UPD6105G-102	
IC807	8-759-100-96	IC UPD74HC174G	

COIL

Ref.No	Part No.	Description	Remark
L801	1-408-970-21	INDUCTOR 10UH	
L802	1-408-979-21	INDUCTOR 56UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q802	8-729-100-76	TRANSISTOR 2SA812	
Q803	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q804	8-729-100-76	TRANSISTOR 2SA812	
Q805	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q806	8-729-900-53	TRANSISTOR DTC114EK	
Q807	8-729-100-76	TRANSISTOR 2SA812	

RESISTOR

Ref.No	Part No.	Description			Remark
R801	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R802	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R803	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R804	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R805	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R807	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W
R808	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R809	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W
R810	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W
R811	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W
R812	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W
R813	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R814	1-216-111-00	METAL GLAZE	390K	5%	1/10W
R815	1-216-111-00	METAL GLAZE	390K	5%	1/10W
R816	1-216-111-00	METAL GLAZE	390K	5%	1/10W
R817	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R818	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R819	1-216-295-00	METAL GLAZE	0	5%	1/10W
R820	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R821	1-216-111-00	METAL GLAZE	390K	5%	1/10W
R823	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R825	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R826	1-216-079-00	METAL GLAZE	18K	5%	1/10W
R829	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R831	1-216-111-00	METAL GLAZE	390K	5%	1/10W
R832	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R833	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W
R834	1-216-075-00	METAL GLAZE	12K	5%	1/10W
R835	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R836	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R838	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R839	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R841	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R850	1-216-296-00	METAL GLAZE	0	5%	1/8W

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV801	1-230-226-00	RES, VAR, CARBON 10K (IRIS OPEN/CLOSE)	
RV802	1-230-868-11	RES, ADJ, METAL GLAZE 2.2K	

SWITCH

Ref.No	Part No.	Description	Remark
S801	1-553-977-00	SWITCH, SLIDE (FOCUS)	
S802	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (FOCUS PUSH AUTO)	
S803	1-554-945-12	SWITCH, SLIDE (WHITE BAL)	
S804	1-571-361-11	SWITCH, ROTARY (SHUTTER)	
S805	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (TITLE SUB)	
S806	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (DATE)	
S807	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (TIME)	
S808	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (FADER/WIPER)	
S809	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE)(REC REVIEW)	
S810	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE)(TITLE MAIN)	

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*A-7061-127-A AW-10 BOARD, COMPLETE

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3-713-724-01 HOLDER, AS SENSOR

CAPACITOR

Ref.No	Part No.	Description			Remark
C501	1-130-467-00	MYLAR	470PF	5%	50V
C502	1-130-481-00	MYLAR	0.0068MF	5%	50V
C503	1-124-462-00	ELECT	10MF	20%	6.3V
C504	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C505	1-124-462-00	ELECT	10MF	20%	6.3V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark
C506	1-162-638-11	CERAMIC CHIP 1MF		16V
C507	1-163-104-00	CERAMIC CHIP 30PF	5%	50V
C508	1-163-104-00	CERAMIC CHIP 30PF	5%	50V
C509	1-124-224-00	ELECT 47MF	20%	6.3V
C510	1-124-224-00	ELECT 47MF	20%	6.3V
C511	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V
C514	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V
C515	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V

CONNECTOR

Ref.No	Part No.	Description
CN501	*1-564-016-00	PIN, CONNECTOR 6P

DIODE

Ref.No	Part No.	Description
D501	8-719-100-05	DIODE 1S2837

IC

Ref.No	Part No.	Description
IC501	8-759-939-68	IC TL062ACPS
IC502	8-759-100-93	IC UPC393G2
IC503	8-759-106-23	IC UPD4066BG
IC504	8-759-012-75	IC MC146805F2FPSC82533

COIL

Ref.No	Part No.	Description
L501	1-408-960-21	INDUCTOR 1.5UH

TRANSISTOR

Ref.No	Part No.	Description
Q501	8-729-903-30	TRANSISTOR DTC144TK
Q502	8-729-903-30	TRANSISTOR DTC144TK
Q503	8-729-904-20	TRANSISTOR FMA2
Q504	8-729-904-20	TRANSISTOR FMA2
Q505	8-729-901-06	TRANSISTOR DTA144EK
Q506	8-729-901-01	TRANSISTOR DTC144EK
Q507	8-729-904-07	TRANSISTOR FMG2
Q508	8-729-904-07	TRANSISTOR FMG2

RESISTOR

Ref.No	Part No.	Description		Remark
R501	1-216-049-00	METAL GLAZE 1K	5%	1/10W
R502	1-216-055-00	METAL GLAZE 1.8K	5%	1/10W
R503	1-216-057-00	METAL GLAZE 2.2K	5%	1/10W
R504	1-216-049-00	METAL GLAZE 1K	5%	1/10W
R505	1-216-073-00	METAL GLAZE 10K	5%	1/10W
R506	1-216-085-00	METAL GLAZE 33K	5%	1/10W
R507	1-216-077-00	METAL GLAZE 15K	5%	1/10W
R508	1-216-069-00	METAL GLAZE 6.8K	5%	1/10W
R509	1-216-073-00	METAL GLAZE 10K	5%	1/10W
R510	1-216-097-00	METAL GLAZE 100K	5%	1/10W
R511	1-216-097-00	METAL GLAZE 100K	5%	1/10W
R512	1-216-097-00	METAL GLAZE 100K	5%	1/10W
R513	1-216-073-00	METAL GLAZE 10K	5%	1/10W
R514	1-216-121-00	METAL GLAZE 1M	5%	1/10W
R515	1-216-107-00	METAL GLAZE 270K	5%	1/10W
R516	1-216-099-00	METAL GLAZE 120K	5%	1/10W
R517	1-216-093-00	METAL GLAZE 68K	5%	1/10W
R518	1-216-085-00	METAL GLAZE 33K	5%	1/10W
R519	1-216-085-00	METAL GLAZE 33K	5%	1/10W
R520	1-216-085-00	METAL GLAZE 33K	5%	1/10W
R521	1-216-069-00	METAL GLAZE 6.8K	5%	1/10W
R522	1-216-073-00	METAL GLAZE 10K	5%	1/10W
R523	1-216-083-00	METAL GLAZE 27K	5%	1/10W
R524	1-216-073-00	METAL GLAZE 10K	5%	1/10W
R525	1-216-083-00	METAL GLAZE 27K	5%	1/10W
R526	1-216-069-00	METAL GLAZE 6.8K	5%	1/10W
R527	1-216-093-00	METAL GLAZE 68K	5%	1/10W
R528	1-216-093-00	METAL GLAZE 68K	5%	1/10W
R529	1-216-093-00	METAL GLAZE 68K	5%	1/10W
R530	1-216-101-00	METAL GLAZE 150K	5%	1/10W
R531	1-216-107-00	METAL GLAZE 270K	5%	1/10W
R532	1-216-115-00	METAL GLAZE 560K	5%	1/10W

VARIABLE RESISTOR

Ref.No	Part No.	Description
RV501	1-230-871-11	RES, ADJ, METAL GLAZE 22K

BALANCE SENSOR

Ref.No	Part No.	Description
SB501	1-807-684-11	SENSOR, WHITE BALANCE (A3208SN)

CRYSTAL

Ref.No	Part No.	Description
X501	1-567-192-11	OSCILLATOR, CERAMIC (4MHz)

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*A-7061-128-A ZM-6 BOARD, COMPLETE
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CAPACITOR

Ref.No	Part No.	Description		Remark
C901	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C902	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C903	1-124-236-00	ELECT 47MF	20%	16V
C904	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C905	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C931	1-162-638-11	CERAMIC CHIP 1MF		16V
C932	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C933	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C934	1-124-222-00	ELECT 22MF	20%	6.3V

CONNECTOR

Ref.No	Part No.	Description
CN901	*1-564-013-00	PIN, CONNECTOR 3P
CN902	*1-564-015-00	PIN, CONNECTOR 5P
CN903	*1-564-012-00	PIN, CONNECTOR 2P
CN904	*1-564-018-51	PIN, CONNECTOR 8P
CN905	*1-564-002-00	PIN, CONNECTOR 3P
CN906	*1-564-001-81	PIN, CONNECTOR 2P
CN907	*1-564-004-00	PIN, CONNECTOR 5P

DIODE

Ref.No	Part No.	Description
D931	8-719-911-19	DIODE 1SS119

When indicating parts by reference number, please include the board name.

IC

Ref.No	Part No.	Description	Remark
IC901	8-759-100-94	IC UPC358G2	
IC931	8-759-701-24	IC NJM3414M	
IC932	8-759-100-94	IC UPC358G2	

COIL

Ref.No	Part No.	Description	Remark
L901	1-410-492-11	INDUCTOR 680UH	

IC LINK

Ref.No	Part No.	Description	Remark
PS901	⚠1-532-935-11	LINK, IC PSM-400 (0.4A)	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q901	8-729-901-06	TRANSISTOR DTA144EK	
Q902	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q903	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q904	8-729-199-92	TRANSISTOR 2SD999	
Q905	8-729-101-07	TRANSISTOR 2SB798	
Q906	8-729-101-07	TRANSISTOR 2SB798	
Q907	8-729-199-92	TRANSISTOR 2SD999	
Q908	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q909	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q910	8-729-901-06	TRANSISTOR DTA144EK	

RESISTOR

Ref.No	Part No.	Description	Remark
R901	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R902	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R903	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R904	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R905	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R906	1-216-058-00	METAL GLAZE 2.4K 5% 1/10W	
R907	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R908	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R909	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R910	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R911	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R912	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R913	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R914	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R915	1-216-058-00	METAL GLAZE 2.4K 5% 1/10W	
R916	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R917	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R918	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R919	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R920	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R931	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R933	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R934	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R935	1-216-043-00	METAL GLAZE 560 5% 1/10W	
R936	1-216-043-00	METAL GLAZE 560 5% 1/10W	
R937	1-216-021-00	METAL GLAZE 68 5% 1/10W	
R938	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R939	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R940	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R941	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R942	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R943	1-216-089-00	METAL GLAZE 47K 5% 1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV931	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
RV932	1-230-871-11	RES, ADJ, METAL GLAZE 22K	

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*A-7051-144-A AF-43 BOARD, COMPLETE
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CAPACITOR

Ref.No	Part No.	Description	Remark
C011	1-131-379-00	TANTALUM 22MF 20% 6.3V	
C012	- - -	CERAMIC CHIP 0.056MF	
C013	1-163-037-11	CERAMIC CHIP 0.022MF 10% 25V	
C014	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
C015	1-131-379-00	TANTALUM 22MF 20% 10V	
C016	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C017	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C031	1-124-472-11	ELECT 470MF 20% 10V	

CONNECTOR

Ref.No	Part No.	Description	Remark
CN001	* - - -	PIN, CONNECTOR 2P	
CN002	* - - -	PIN, CONNECTOR 2P	
CN003	* - - -	PIN, CONNECTOR 2P	

DIODE

Ref.No	Part No.	Description	Remark
D011	8-719-400-37	DIODE MA3047-H	

IC

Ref.No	Part No.	Description	Remark
IC011	- - -	IC AN654S	
IC012	8-759-908-81	IC MB3763PF	
IC013	- - -	IC AN8005	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q011	8-729-497-32	TRANSISTOR 2SD973-Q	
Q021	8-729-400-60	TRANSISTOR 2SD874A-Q	
Q031	8-729-400-58	TRANSISTOR 2SB766A-R	
Q032	- - -	TRANSISTOR 2SB710	
Q041	1-806-832-11	TRANSISTOR 2SD601	

RESISTOR

Ref.No	Part No.	Description	Remark
R011	1-216-052-00	METAL GLAZE 1.3K 5% 1/10W	
R012	1-216-100-00	METAL GLAZE 130K 5% 1/10W	
R013	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R014	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R015	1-216-060-00	METAL GLAZE 3K 5% 1/10W	
R016	1-216-060-00	METAL GLAZE 3K 5% 1/10W	
R017	1-216-180-00	METAL GLAZE 180 5% 1/8W	
R021	1-214-811-11	METAL 6.2 1% 1/2W	
R022	- - -	CHIP RESISTOR 9.1	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

AF-43 VF-7

Ref.No	Part No.	Description				Remark
R031	1-249-480-11	CARBON	3.3	5%	1/2W	F
R032	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R033	1-216-264-00	METAL GLAZE	560K	5%	1/8W	
R034	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R035	1-216-210-00	METAL GLAZE	3.3K	5%	1/8W	
R041	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R042	1-216-073-00	METAL GLAZE	10K	5%	1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description
VR011	- - -	RES, ADJ 10K
VR012	- - -	RES, ADJ 10K

CONNECTOR

Ref.No	Part No.	Description
W001	- - -	POWER, CONNECTOR
W002	- - -	FLAT CABLE

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*A-7061-148-A VF-7 BOARD, COMPLETE (AEP MODEL)

*A-7061-159-A VF-7 BOARD, COMPLETE (UK MODEL)

Part No.	Description
1-526-926-11	SOCKET ASSY, CRT
*3-662-075-00	COVER, CONTROL
*3-712-665-01	HOLDER, LED

CAPACITOR

Ref.No	Part No.	Description				Remark
C701	1-124-638-11	ELECT	22MF	20%	6.3V	
C702	1-163-081-00	CERAMIC CHIP	0.22MF		25V	
C703	1-131-587-11	TANTALUM	0.68MF	5%	35V	
C704	1-124-224-00	ELECT	47MF	20%	6.3V	
C705	1-163-139-00	CERAMIC CHIP	820PF	10%	50V	
C706	1-162-638-91	CERAMIC CHIP	1MF		16V	
C707	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V	
C708	1-124-462-00	ELECT	10MF	20%	16V	
C709	1-163-209-00	CERAMIC CHIP	0.0015MF	5%	50V	
C710	1-163-115-00	CERAMIC CHIP	82PF	5%	50V	
C711	1-163-077-00	CERAMIC CHIP	0.1MF		50V	
C712	1-163-125-00	CERAMIC CHIP	220PF	10%	50V	
C713	1-124-442-00	ELECT	330MF	20%	6.3V	
C714	1-124-604-00	ELECT	330MF	20%	10V	
C715	1-163-077-00	CERAMIC CHIP	0.1MF		50V	
C716	1-163-023-00	CERAMIC CHIP	0.015MF	10%	50V	
C717	1-123-611-00	ELECT	1MF	20%	50V	
C718	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V	
C719	1-163-013-00	CERAMIC CHIP	0.0022MF	10%	50V	
C720	1-163-189-00	CERAMIC CHIP	220PF	10%	50V	
C721	⚠1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V	
C722	⚠1-163-019-00	CERAMIC CHIP	0.0068MF	10%	50V	
C723	1-124-258-00	ELECT	3.3MF	20%	50V	
C724	1-162-697-11	CERAMIC	0.001MF		1KV	
C725	1-102-038-00	CERAMIC	0.001MF	99%	500V	
C726	1-163-077-00	CERAMIC CHIP	0.1MF			50V
C727	1-163-017-00	CERAMIC CHIP	0.0047MF	10%		50V

CONNECTOR

Ref.No	Part No.	Description
CN702	*1-564-001-11	PIN, CONNECTOR 2P
CN703	*1-564-001-11	PIN, CONNECTOR 2P

DIODE

Ref.No	Part No.	Description
D701	8-719-400-20	DIODE MA152WA
D702	8-719-801-48	DIODE 1SS193
D703	8-719-801-45	DIODE 1SS187
D704	8-719-800-24	DIODE TLR147

IC

Ref.No	Part No.	Description
IC701	8-759-403-49	IC AN2510S

COIL

Ref.No	Part No.	Description	
L701	⚠1-408-980-21	INDUCTOR	68UH
L702	⚠1-459-683-11	COIL, FERRITE (HLC)	
L703	1-408-974-21	INDUCTOR	22UH

IC LINK

Ref.No	Part No.	Description
PS701	⚠1-532-833-21	LINK, IC PRF-250 (0.25A) (UK MODEL)

TRANSISTOR

Ref.No	Part No.	Description
Q701	8-729-100-66	TRANSISTOR 2SC1623
Q702	8-729-162-43	TRANSISTOR 2SB624-BV3
Q703	8-729-100-67	TRANSISTOR 2SC1623-L7
Q704	8-729-106-64	TRANSISTOR 2SD1615

RESISTOR

Ref.No	Part No.	Description				Remark
R701	1-216-306-11	METAL GLAZE	3.9	5%	1/10W	
R702	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R703	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R704	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R705	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R706	1-216-017-00	METAL GLAZE	47	5%	1/10W	
R707	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R708	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R709	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R710	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R711	1-216-228-00	METAL GLAZE	18K	5%	1/8W	
R712	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R713	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R714	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R715	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R716	⚠1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R717	1-216-222-00	METAL GLAZE	10K	5%	1/8W	
R718	⚠1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R720	1-216-131-11	METAL GLAZE	2.7M	5%	1/10W	
R721	1-216-129-00	METAL GLAZE	2.2M	5%	1/10W	
R722	1-216-119-00	METAL GLAZE	820K	5%	1/10W	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R723	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R726	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R740	1-216-296-00	METAL GLAZE 0 5% 1/8W	
R741	1-216-296-00	METAL GLAZE 0 5% 1/8W	
R742	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R743	1-216-296-00	METAL GLAZE 0 5% 1/8W	(AEP MODEL)
R744	1-216-296-00	METAL GLAZE 0 5% 1/8W	
R745	1-216-296-00	METAL GLAZE 0 5% 1/8W	
R746	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R747	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R748	1-216-295-00	METAL GLAZE 0 5% 1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV701	1-226-701-00	RES, ADJ, SOLID 220	
RV702	1-230-521-11	RES, ADJ, SOLID 2.2K	
RV703	1-230-524-11	RES, ADJ, SOLID 22K	
RV704	1-230-041-00	RES, ADJ, METAL GLAZE 2.2M	
RV705	1-230-041-00	RES, ADJ, METAL GLAZE 2.2M	

TRANSFORMER

Ref.No	Part No.	Description	Remark
T701	⚠1-439-394-11	TRANSFORMER ASSY, FLYBACK	

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*A-7070-024-A LD-1 BOARD, COMPLETE
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DIODE

Ref.No	Part No.	Description	Remark
D901	8-719-928-54	DIODE GL-450S	

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A-7090-029-A MS-4 BOARD, COMPLETE
****

CAPACITOR

Ref.No	Part No.	Description	Remark
C901	1-163-038-00	CERAMIC CHIP 0.1MF 25V	

CONNECTOR

Ref.No	Part No.	Description	Remark
CN905	*1-564-671-31	PIN, CONNECTOR (HOOK TYPE)	

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LS-9 BOARD
****

CONNECTOR

Ref.No	Part No.	Description	Remark
CN904	*1-564-671-11	PIN, CONNECTOR (HOOK TYPE)	

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*A-7070-597-A ZS-3 BOARD, COMPLETE
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CONNECTOR

Ref.No	Part No.	Description	Remark
CN951	*1-564-002-00	PIN, CONNECTOR 3P	
CN952	*1-564-003-00	PIN, CONNECTOR 4P	
CN953	*1-564-003-00	PIN, CONNECTOR 4P	
CN954	*1-564-002-00	PIN, CONNECTOR 3P	

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*A-7070-598-A LI-7 BOARD, COMPLETE
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JACK

Ref.No	Part No.	Description	Remark
J961	1-550-104-21	HOLDER, BATTERY	

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*A-7070-599-A GS-4 BOARD, COMPLETE
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SWITCH

Ref.No	Part No.	Description	Remark
S921	1-570-689-11	SWITCH, KEY BOARD (START/STOP)	

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*A-7070-653-A DR-45 BOARD, COMPLETE
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Ref.No	Part No.	Description	Remark
	2-279-715-21	RIVET, NYLON	
	3-712-398-01	REINFORCEMENT (31)	

CAPACITOR

Ref.No	Part No.	Description	Remark
C501	1-123-611-00	ELECT 1MF 20% 50V	
C502	1-123-611-00	ELECT 1MF 20% 50V	
C503	1-124-255-00	ELECT 1MF 20% 50V	
C504	1-124-258-00	ELECT 3.3MF 20% 25V	
C505	1-124-255-00	ELECT 1MF 20% 50V	
C506	1-163-075-00	CERAMIC CHIP 0.047MF 10% 25V	
C507	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C508	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C509	1-126-099-11	ELECT 2.2MF 20% 35V	
C511	1-163-017-00	CERAMIC CHIP 0.0047MF 10% 50V	
C512	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C513	1-124-577-11	ELECT 82MF 20% 10V	
C514	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C515	1-124-577-11	ELECT 82MF 20% 10V	
C516	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C517	1-124-462-00	ELECT 10MF 20% 16V	
C518	1-124-462-00	ELECT 10MF 20% 16V	
C519	1-124-462-00	ELECT 10MF 20% 16V	
C520	1-124-577-11	ELECT 82MF 20% 10V	
C521	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C522	1-124-596-11	ELECT 27MF 20% 16V	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
C523	1-124-596-11	ELECT 27MF 20%	16V
C524	1-124-596-11	ELECT 27MF 20%	16V
C527	1-163-809-11	CERAMIC CHIP 0.047MF 10%	25V
C528	1-163-809-11	CERAMIC CHIP 0.047MF 10%	25V

CONNECTOR

Ref.No	Part No.	Description	Remark
CN312	*1-564-012-00	PIN, CONNECTOR 2P	
CN504	*1-564-014-71	PIN, CONNECTOR 4P	

DIODE

Ref.No	Part No.	Description	Remark
D501	8-719-200-36	DIODE E10QS04	
D502	8-719-200-36	DIODE E10QS04	
D503	8-719-200-36	DIODE E10QS04	

IC

Ref.No	Part No.	Description	Remark
IC501	8-759-202-45	IC CX20114	
IC502	8-752-003-60	IC CX20036	

COIL

Ref.No	Part No.	Description	Remark
L501	1-410-628-11	COIL, CHOKE 200UH	
L502	1-410-628-11	COIL, CHOKE 200UH	
L503	1-410-628-11	COIL, CHOKE 200UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q501	8-729-100-76	TRANSISTOR 2SA812	
Q502	8-729-901-01	TRANSISTOR DTC144EK	
Q503	8-729-100-76	TRANSISTOR 2SA812	
Q504	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q505	8-729-106-40	TRANSISTOR 2SB1114-ZK	
Q506	8-729-106-40	TRANSISTOR 2SB1114-ZK	
Q507	8-729-700-11	NJL7141E-N	

RESISTOR

Ref.No	Part No.	Description	Remark
R501	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R502	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R503	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R504	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R505	1-216-047-00	METAL GLAZE 820 5% 1/10W	
R506	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R507	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R508	1-216-101-00	METAL GLAZE 150K 5% 1/10W	
R509	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R510	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R511	1-216-099-00	METAL GLAZE 120K 5% 1/10W	
R512	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R513	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R514	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R515	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R516	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R517	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R518	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R519	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R520	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R521	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R522	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R523	1-214-972-00	METAL 0.22 1% 1/4W	
R524	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R525	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R526	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R527	1-216-304-11	METAL GLAZE 3.3 5% 1/10W	
R528	1-216-304-11	METAL GLAZE 3.3 5% 1/10W	
R529	1-216-304-11	METAL GLAZE 3.3 5% 1/10W	
R530	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
R534	1-216-295-00	METAL GLAZE 0 5% 1/10W	

FLAT TYPE

Ref.No	Part No.	Description	Remark
W503	*1-558-803-11	WIRE, FLAT TYPE 19P	

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*A-7070-654-A SC-9 BOARD, COMPLETE
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CAPACITOR

Ref.No	Part No.	Description	Remark
C383	1-124-236-00	ELECT 47MF 20% 10V	
C384	1-163-013-00	CERAMIC CHIP 0.0022MF 10% 50V	

CONNECTOR

Ref.No	Part No.	Description	Remark
CN381	*1-564-014-51	PIN, CONNECTOR 4P	

DIODE

Ref.No	Part No.	Description	Remark
D381	8-719-106-44	DIODE RD9.1M-B2	
D382	8-719-106-44	DIODE RD9.1M-B2	
D383	8-719-106-44	DIODE RD9.1M-B2	
D384	8-719-106-44	DIODE RD9.1M-B2	
D385	8-719-106-44	DIODE RD9.1M-B2	
D386	8-719-106-44	DIODE RD9.1M-B2	
D387	8-719-106-44	DIODE RD9.1M-B2	
D388	8-719-106-44	DIODE RD9.1M-B2	
D389	8-719-106-44	DIODE RD9.1M-B2	

JACK

Ref.No	Part No.	Description	Remark
J381	1-537-131-11	JACK BOARD (VIDEO/RFC DC/AUDIO/AUDIO L/AUDIO R OUT)	

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*A-7070-655-A RJ-3 BOARD, COMPLETE
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CAPACITOR

Ref.No	Part No.	Description	Remark
C951	1-163-021-00	CERAMIC CHIP 0.01MF 50V	

DIODE

Ref.No	Part No.	Description	Remark
D951	8-719-106-71	DIODE RD12M-B2	
D952	8-719-106-71	DIODE RD12M-B2	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
D953	8-719-106-71	DIODE RD12M-B2	

JACK

Ref.No	Part No.	Description	Remark
J951	1-562-589-11	SOCKET, DIN (SMALL TYPE) 5P (REMOTE)	

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*A-7070-656-A FU-62 BOARD, COMPLETE

CAPACITOR

Ref.No	Part No.	Description				Remark
C431	1-123-321-00	ELECT	220MF	20%	16V	
C432	1-126-103-11	ELECT	470MF	20%	16V	

CONNECTOR

Ref.No	Part No.	Description	Remark
CN431	*1-564-028-00	PIN, CONNECTOR 3P	
CN433	*1-564-002-00	PIN, CONNECTOR 3P	

FUSE

Ref.No	Part No.	Description	Remark
F901	⚠1-532-285-00	FUSE, TIME-LAG	
F902	⚠1-532-285-00	FUSE, TIME-LAG	
F903	⚠1-532-285-00	FUSE, TIME-LAG	

FUSE HOLDER

Ref.No	Part No.	Description	Remark
FH431	*1-533-146-00	HOLDER, FUSE (250V/1.25A)	
FH432	*1-533-146-00	HOLDER, FUSE (250V/1.25A)	
FH433	*1-533-146-00	HOLDER, FUSE (250V/1.25A)	

COIL

Ref.No	Part No.	Description		Remark
L431	1-410-337-11	INDUCTOR	1UH	
L432	1-410-337-11	INDUCTOR	1UH	
L433	1-410-337-11	INDUCTOR	1UH	
L434	1-410-337-11	INDUCTOR	1UH	
L435	1-410-337-11	INDUCTOR	1UH	

IC LINK

Ref.No	Part No.	Description	Remark
PS431	⚠1-532-940-11	LINK, IC PSM-1250 (1.25A)	

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*A-7070-657-A VR-17 BOARD, COMPLETE

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV200	1-237-969-11	RES, VAR, CARBON 10K/10K (REC LEVEL L/R)	

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*A-7070-658-A EM-2 BOARD, COMPLETE

CAPACITOR

Ref.No	Part No.	Description				Remark
C401	1-163-013-00	CERAMIC CHIP	0.0022MF	10%	50V	
C411	1-124-462-00	ELECT	10MF	20%	16V	
C413	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C414	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V	
C415	*1-163-093-00	CERAMIC CHIP	10PF			

CONNECTOR

Ref.No	Part No.	Description	Remark
CN401	*1-564-001-11	PIN, CONNECTOR 2P	
CN402	*1-564-001-61	PIN, CONNECTOR 2P	
CN403	*1-564-001-81	PIN, CONNECTOR 2P	
CN404	*1-564-004-00	PIN, CONNECTOR 5P	
CN407	*1-564-003-00	PIN, CONNECTOR 4P	

COIL

Ref.No	Part No.	Description		Remark
L401	1-408-960-21	INDUCTOR	1.5UH	
L402	1-408-789-21	INDUCTOR CHIP	100UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q412	8-729-100-67	TRANSISTOR 2SC1623-L7	
Q414	8-729-901-01	TRANSISTOR DTC144EK	

RESISTOR

Ref.No	Part No.	Description				Remark
R411	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R412	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R413	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R414	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R417	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R418	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R419	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R420	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	

****

*A-7070-659-A PV-3 BOARD, COMPLETE

CONNECTOR

Ref.No	Part No.	Description	Remark
CN190	*1-564-002-00	PIN, CONNECTOR 3P	

RESISTOR

Ref.No	Part No.	Description				Remark
R251	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R252	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV197	1-230-661-11	RES, VAR, CARBON 10K (PHONE LEVEL)	

****

*A-7070-660-A PJ-19 BOARD, COMPLETE

CONNECTOR

Ref.No	Part No.	Description	Remark
CN061	*1-564-012-00	PIN, CONNECTOR 2P	

DIODE

Ref.No	Part No.	Description	Remark
D061	8-719-106-44	DIODE RD9.1M-B2	
D062	8-719-106-44	DIODE RD9.1M-B2	
D063	8-719-106-44	DIODE RD9.1M-B2	
D064	8-719-106-44	DIODE RD9.1M-B2	
D065	8-719-106-44	DIODE RD9.1M-B2	
D066	8-719-106-44	DIODE RD9.1M-B2	
D067	8-719-100-15	DIODE RD3.0EB2	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

PJ-19 HJ-4 MS-11 DL-22 ME-5

Ref.No	Part No.	Description	Remark
		JACK	
J061	1-537-149-11	JACK BOARD 3P (VIDEO IN, AUDIO IN L/R)	

****

	*A-7070-661-A	HJ-4 BOARD, COMPLETE *********************	
		DIODE	
D071	8-719-106-44	DIODE RD9.1M-B2	
D072	8-719-106-44	DIODE RD9.1M-B2	
D073	8-719-106-44	DIODE RD9.1M-B2	
D074	8-719-106-44	DIODE RD9.1M-B2	
D075	8-719-106-44	DIODE RD9.1M-B2	
D076	8-719-106-44	DIODE RD9.1M-B2	
D077	8-719-106-44	DIODE RD9.1M-B2	
D078	8-719-106-44	DIODE RD9.1M-B2	
		JACK	
J071	1-507-929-11	JACK (PHONES)	
J072	1-562-785-21	JACK (MIC)	
		COIL	
L071	1-410-369-11	INDUCTOR CHIP 1UH	
L072	1-410-369-11	INDUCTOR CHIP 1UH	
L073	1-410-369-11	INDUCTOR CHIP 1UH	
L074	1-410-369-11	INDUCTOR CHIP 1UH	
L075	1-410-369-11	INDUCTOR CHIP 1UH	

****

	*A-7070-667-A	MS-11 BOARD, COMPLETE **********************	
		SWITCH	
S001	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (PUSH TO NARRATE)	

****

	*A-7070-668-A	DL-22 BOARD, COMPLETE **********************	
	*3-674-372-00	HOLDER (A), LED	
		DIODE	
D199	8-719-812-41	DIODE TLR124 (AUDIO DUB)	
		SWITCH	
S199	1-554-364-00	SWITCH, SLIDE (AUDIO DUB)	

****

Ref.No	Part No.	Description	Remark
	*A-7070-672-A	ME-5 BOARD, COMPLETE *********************	
	*3-674-372-00	HOLDER (A), LED	
		CONNECTOR	
CN081	*1-564-003-00	PIN, CONNECTOR 4P	
		DIODE	
D081	8-719-812-43	DIODE TLG124A (PCM)	
		LEVEL METER	
ME001	1-520-499-11	METER, LEVEL (L)	
ME002	1-520-499-11	METER, LEVEL (R)	

****

		MISCELLANEOUS *************	
	A-7090-029-A	M-SW ASSY	412, 438
	X-3712-403-1	L-SW ASSY	
	⚠1-464-897-11	CONVERTER UNIT, DC-DC	
	1-520-499-11	METER, LEVEL	
	⚠1-532-285-00	FUSE, TIME-LAG	
	1-535-535-11	TERMINAL, SHAFT GROUND	
	1-542-096-11	MICROPHONE (STEREO)	
	1-542-097-11	MICROPHONE UNIT	
	1-547-262-11	LENS, ZOOM (VCL-1108YA)	
	1-619-921-11	FP-19 FLEXIBLE BOARD	
	1-626-234-11	FP-107 FLEXIBLE BOARD	
	1-626-250-11	FP-109 FLEXIBLE BOARD	
	1-626-251-11	FP-116 FLEXIBLE BOARD	
	1-626-252-11	FP-117 FLEXIBLE BOARD	
	1-807-744-11	SENSOR (DEW)	
	8-835-138-01	MOTOR, DC (DNR-5301B)	
IC101	8-750-010-89	IU024AK-11A (CCD IMAGER)	
L901	⚠1-451-296-11	DEFLECTION YOKE(BLACK & WHITE) (L901)	
M901	A-7040-031-A	MOTOR ASSY, L (LOADING)	
M902	8-835-196-01	MOTOR, DC BHF-2802A (CAPSTAN)	
M903	8-835-110-01	MOTOR, DC (DNR-5301A) (CONTROL)	
M904	3-707-417-01	MOTOR ASSY, AF (FOCUS)	
M905	3-707-418-01	MOTOR ASSY, PZ (ZOOM)	
PM901	⚠1-454-377-21	SOLENOID, PLUNGER	
S901	1-553-226-00	SWITCH, LEAF (CASSETTE LOCK)	
S902	1-554-942-11	SWITCH, PUSH (RECOG)	
S904	1-571-373-11	SWITCH, PUSH (ZOOM T/W)	
V901	⚠1-546-061-11	CATHODE-RAY TUBE, B/W (V901)	

****

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

ACCESSORIES AND PACKING MATERIALS
****

Part No.	Description	Remark
A-6767-706-A	RFU ADAPTER (RFU-89EK) (AEP MODEL)	
A-6767-707-A	RFU ADAPTER (RFU-89EK) (UK MODEL)	
1-556-955-51	CABLE, AUDIO VIDEO	
1-571-164-11	SWITCH, ANTENNA CHANGE	
3-712-673-01	SCREWDRIVER	
*3-721-769-01	CUSHION (LOWER)	
*3-721-770-01	CUSHION (UPPER)	
*3-725-338-01	CARTON, ACC KIT	
*3-725-340-01	CUSHION (UPPER), ACC	
*3-725-341-01	CUSHION (LOWER), ACC	
3-769-732-11	MANUAL, INSTRUCTION :ENGLISH (AEP/UK MODEL)	
3-769-732-41	MANUAL, INSTRUCTION :FRENCH, GERMAN, SPANISH (AEP MODEL)	
3-769-732-51	MANUAL, INSTRUCTION :NETHERLANDISH, SWDISH, ITALIAN (AEP MODEL)	
8-952-321-94	EARPHONE MDR-E434/V SET	
** ACP-88	AC POWER ADAPTER	
** BCA-70	BATTERY CHARGE ADAPTER	
*** NP-22H	BATTERY PACK	

Note:

** MARK PARTS IS AVAILABLE FOR REPAIR SERVICE.

*** MARK PARTS IS AVAILABLE AS A OPTIONAL ACCESSARIES.

****

HARDWARE LIST

SCREW

7-621-255-20	SCREW +P 2X4
7-621-255-45	SCREW +P 2X6
7-621-255-50	SCREW +P 2X8
7-621-255-65	SCREW +P 2X10
7-621-259-35	SCREW +P 2.6X5
7-621-555-10	SCREW +K 2X3
7-621-772-08	SCREW +B 2X3
7-621-772-18	SCREW +B 2X4
7-621-772-38	SCREW +B 2X6
7-621-772-68	SCREW +B 2X12
7-621-772-78	SCREW +B 2X14
7-621-773-86	SCREW +B 2.6X4
7-621-775-10	SCREW +B 2.6X4
7-621-775-20	SCREW +B 2.6X5
7-627-553-48	SCREW, PRECISION +P 2X4
7-627-850-18	SCREW, PRECISION +P 1.4X2.5
7-628-254-20	SCREW +PS 2.6X8
7-685-103-19	SCREW +P 2X5 TYPE2 SLIT
7-685-133-19	SCREW +P 2.6X6 TYPE2 SLIT
7-685-203-19	SCREW +KTP 2X5 TYPE2 NON-SLIT
7-685-133-19	SCREW +BTP 2.6X6 TYPE2 N-S
7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S
7-685-535-19	SCREW +BTP 2.6X10 TYPE2 N-S
7-685-536-19	SCREW +BTP 2.6X12 TYPE2 N-S
7-685-538-19	SCREW +BTP 2.6X16 TYPE2 N-S
7-621-255-15	SCREW +PTT 2X3 (S)
7-621-255-45	SCREW +BVTT 2X6 (S)

WASHER

7-623-710-57	WASHER 10, WABE TYPE
7-623-710-87	WASHER 16, WABE TYPE

STOP RING

7-624-101-01	STOP RING 1.2 (E TYPE)
7-624-102-04	STOP RING 1.5, TYPE -E
7-624-105-04	STOP RING 2.3, TYPE -E
7-624-106-04	STOP RING 3.0, TYPE -E

TAPPING

7-685-105-19	TPG +P 2X8, TYPE 2, NON-SLIT

When indicating parts by reference number, please include the board name.

SECTION 7
CAMERA SECTION ADJUSTMENTS

During the adjustment, see the parts arrangement diagram relevant to the adjustment on page 276.

7-1. PRE-ADJUSTMENT PREPARATIONS (CAMERA BLOCK)

7-1-1. List of Servicing Jigs

- Oscilloscope
- Regulated power supply
- Adjusting screw driver
- L-shaped hexagonal wrench
- Stop watch
- Colour monitor TV
- Vectorscope

Ref. No.	Name	Part No.	Use
J-1	Filter (C22)	J-6080-829-A	Automatic white balance operation check
J-2	ND filter 0.4	J-6080-806-A	IRIS setting adjustment, Max gain adjustment, chroma pedestal adjustment
	ND filter 0.1	J-6080-807-A	IRIS setting adjustment
	ND filter 0.9	J-6080-833-A	Max gain adjustment, LLA adjustment (Use 2pcs)
J-3	Pattern box PTB-500 *1	J-6029-140-A	
J-4	Colour bar pattern chart	J-6020-250-A	
J-5	Extension cable K (4P, 2mm pitch)	J-6080-871-A	
J-6	Extension cable M (2P, 2mm pitch)	J-6080-873-A	
J-7	Extension cable I (7P, 2mm pitch)	J-6080-869-A	
J-8	Siemens star	J-6080-875-A	Flange back adjustment

*1 PTB-100 (J-6020-490-A) is possible to use.

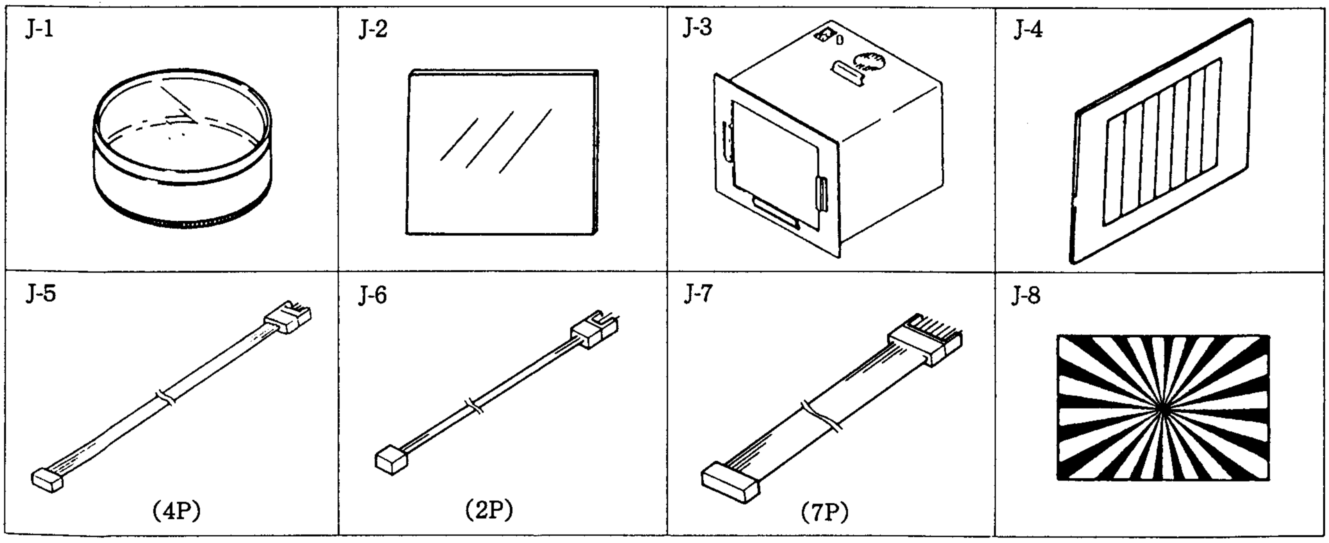


Fig. 7-1.

7-1-2. Preparations

Note : Refer to SECTION 2. DISASSEMBLY for details of the cabinet and individual boards removal procedure.

1) Connect extension cable as shown in Fig. 7-3.
2) EVF (Electrical View Finder) section (VF-7 board) is necessary for confirmation of shutter speed, white balance mode and etc.
It can be removed by taking out CN404 on the EM-2 board.
3) The microphone unit is not necessary.
Remove the stereo microphone unit CN401 and CN402 on the AU-48 board.

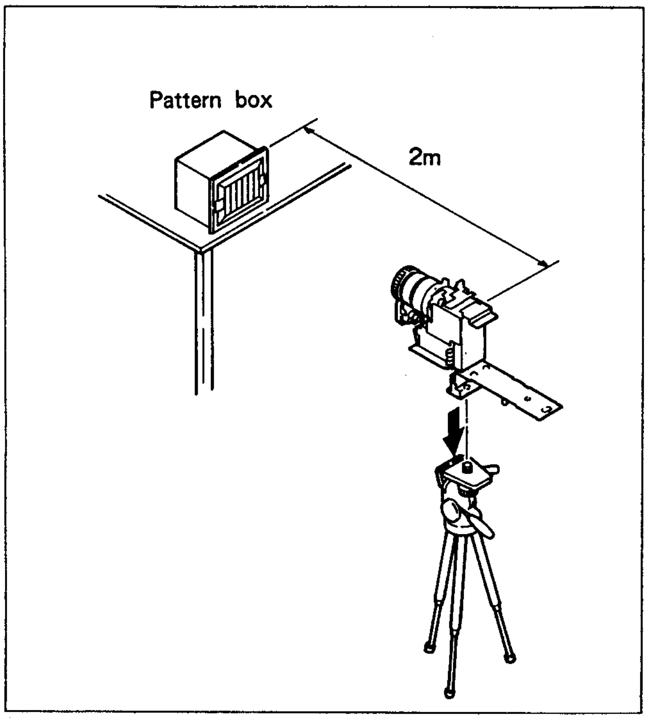
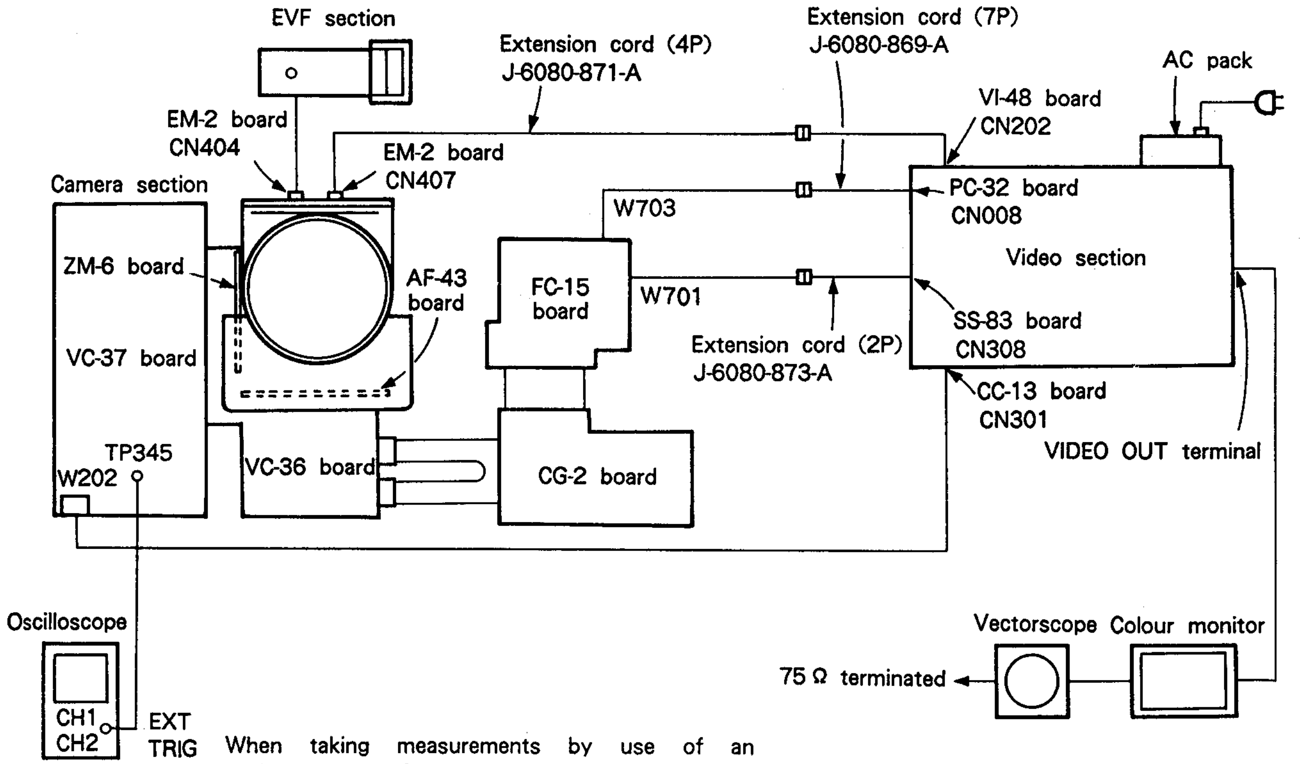

Pattern box
2m

Fig. 7-2


EVF section
Extension cord (4P)
J-6080-871-A
Extension cord (7P)
J-6080-869-A
AC pack
VI-48 board
CN202
EM-2 board
CN404
EM-2 board
CN407
Camera section
W703
PC-32 board
CN008
Video section
ZM-6 board
AF-43 board
FC-15 board
W701
SS-83 board
CN308
VC-37 board
Extension cord (2P)
J-6080-873-A
CC-13 board
CN301
VIDEO OUT terminal
TP345
W202
VC-36 board
CG-2 board
Oscilloscope
Vectorscope
Colour monitor
75 Ω terminated
CH1
CH2
EXT
TRIG

When taking measurements by use of an oscilloscope, the EXT terminal and TP345 (VIDEO OUT) on the VC-37 board should be connected together for synchronization, unless otherwise specified.

Fig. 7-3

7-1-3. Caution

1) Setting of switches

Employ the following switch and control setting in making adjustments, unless otherwise noted.

1. IRIS control (RV801 on CG-2 board)
   ··········Center click position
2. FOCUS switch (S801 on CG-2 board)
   ··········Manual mode
3. WHITE BALANCE switch (S803 on CG-2 board)
   ··········☼ (INDOOR) position.
4. SHUTTER SPEED switch (S804 on CG-2 board)
   ··········Normal position ("60" position)

2) Adjusting order

As a rule, adjust in described order.

3) Objects

1. Colour bar chart (Standard picture frame)
   When making adjustments by the use of a colour bar chart, first adjust picture frame as shown in Fig. 7-4.(Standard picture frame).

Standard picture frame

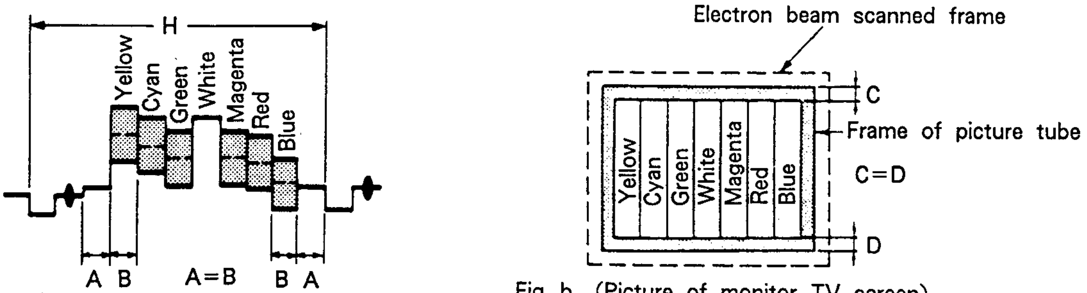

H
Yellow
Cyan
Green
White
Magenta
Red
Blue
A B
A=B
B A
Electron beam scanned frame
C
Frame of picture tube
C=D
D
Yellow
Cyan
Green
White
Magenta
Red
Blue

Fig. a (Camera output waveform of TP345 on VC-37 board)

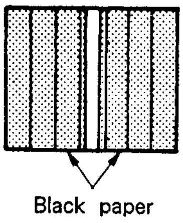
Fig. b (Picture of monitor TV screen)

By operating the camera zooming and orientation, have the Fig. a output waveform output and the Fig. b monitor TV image displayed.

Fig. 7-4.

2. Full white pattern
   Remove colour bar chart off pattern box, and set zoom lever to fully TELE side (88 mm).
3. High luminance pattern
   Prepare a high luminance pattern as shown in Fig. 7-5 and adjust picture frame as shown in Fig. 7-6.
4. Siemens star (J-6080-875-A)
   Orient camera to have the pattern center coincide with the monitor screen center on a monitor TV screen.

High luminance pattern


Black paper

Cover a colour bar chart with black paper, except half the width of its white stripe. Then shoot the chart in this state.

Fig. 7-5

High luminance pattern

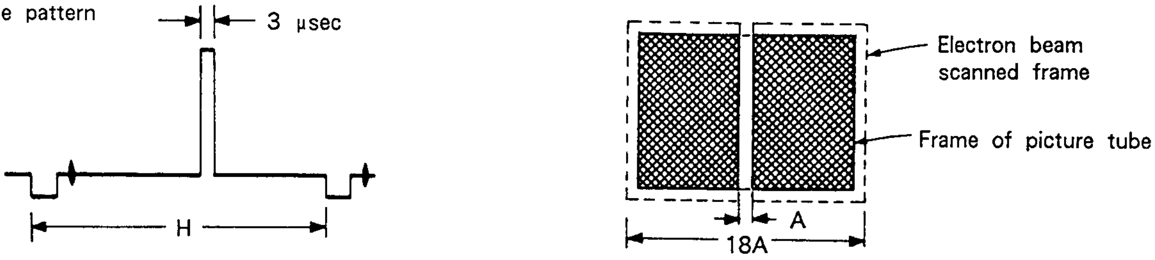

3 μsec
H
Electron beam scanned frame
Frame of picture tube
A
18A

Fig. a (Camera output waveform of TP345 on VC-37 board)

Fig. b (Picture of monitor TV screen)

By operating the camera zooming and orientation have the Fig. a output waveform output and the Fig. b monitor TV image displayed.

Fig. 7-6.

7-2. CAMERA SYSTEM ADJUSTMENT

7-2-1. Flange Back Adjustment

Subject	Siemens star (At approx. 2.0 m distance in front of CCD surface (marked with "ф"))
Measurement Point	Check with a monitor TV
Measuring Instrument	
Adjusting Element	Flange back adjusting pin
Tools	L-shaped hexagonal wrench and screwdriver

Adjusting method :

1) Set the FOCUS switch (S801 on the CG-2 board) to its MANUAL Position.
2) Position a Siemens star 2.0 m directly in front of CCD surface (See Fig. 7-2.).
3) Orient camera block to have the center of the Siemens star on the monitor TV screen coincide with the monitor screen center.
4) Check to assure the smooth motion of zoom lever to both its extreme WIDE position (11 mm) and TELE position (88 mm), and then set it at the extreme WIDE position.(In this process, also check the zooming operation on the monitor screen.)
5) Set IRIS control (RV801 on the CG-2 board) at its OPEN position.
6) Set the lens focusing mark at the center of "2".

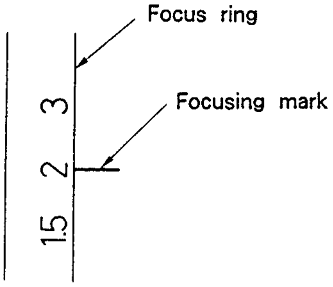

Focus ring
Focusing mark
1.5
2
3

Fig. 7-7.

7) Loosen hexagonal socket head setscrew ❶ with an L-shaped hexagonal wrench. (See Fig. 7-9.)
8) By turning flange back adjusting pin ❷ while watching the monitor screen, attain the highest definition of a wedge at the Siemens star center on the screen.(Turn it several times to the right and left, to assure the definition to be the highest.)
   Note : Do not turn the adjusting pin excessively in either direction at a time.
9) While holding flange back adjusting pin ❷ down for any further turns, retighten hexagonal socket head setscrew ❶.
10) With zoom lever fixed at its WIDE end, turn focus ring, and set it at a position that provides the highest definition image of the wedge. Check to assure the focusing mark position thus attained to be within the Fig. 7-8 range.

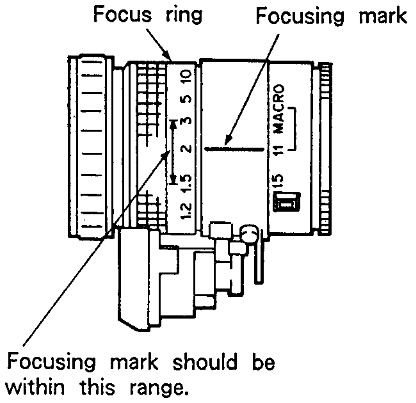

Focus ring
Focusing mark
1.2 1.5 2 3 5 10
15 11 MACRO
Focusing mark should be within this range.

Fig. 7-8

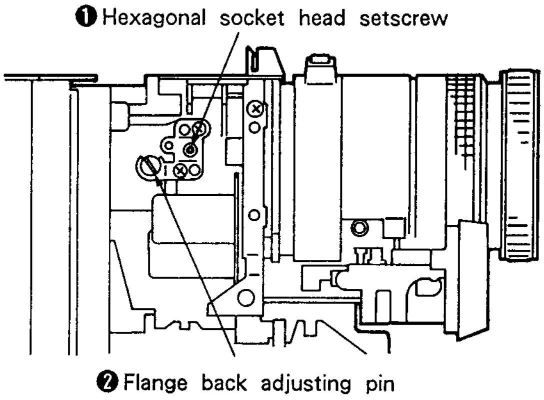

❶ Hexagonal socket head setscrew
❷ Flange back adjusting pin

Fig. 7-9.

11) Turn zoom lever fully to its extreme TELE position.
12) By turning focus ring, check to assure the position that provides the highest definition view of the wedge. Confirm that the focus ring is set within indication "2" at this time.

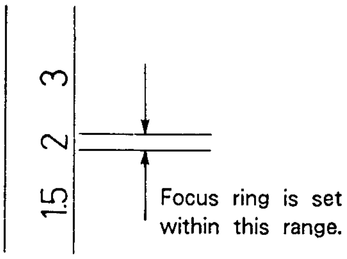

1.5
2
3
Focus ring is set within this range.

Fig. 7-10.

7-2-2. Camera DC-DC Converter Voltage Check (VC-36 Board)

Measuring Instrument	Digital voltmeter
5V check	
Specified Value	5.1±0.05 Vdc
Measurement Point	Pin ① of W104
7V check	
Specified Value	7.0±0.15 Vdc
Measurement Point	Pin ② of W104
15V check	
Specified Value	15.0±0.2 Vdc
Measurement Point	Pin ④ of W104
30V check	
Specified Value	30.0±1.0 Vdc
Measurement Point	Pin ⑤ of W104

Checking method :

1) Confirm that the power voltages satisfy the respective specified values.

7-2-3. Clock Oscillation Frequency Adjustment (VC-37 Board)

Measurement Point	Pin ⑰ (CL) on DT-62 board
Measuring Instrument	Frequency counter
Adjusting Element	CT201
Specified Value	14187500±168 Hz

Adjusting method :

1) Adjust to 14187500±168 Hz with CT201.

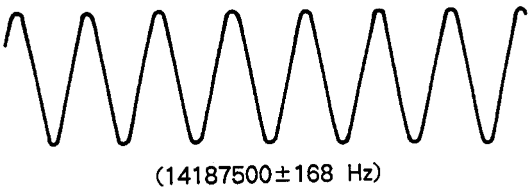

(14187500±168 Hz)

Fig. 7-11.

7-2-4. PLL Adjustment (VC-37 Board)

Measurement Point	Land of R221 and R222 (See Fig. 7-12.)
Measuring Instrument	Digital voltmeter
Adjusting Element	CT202
Specified Value	2.5±0.2 Vdc

Adjusting method :

1) Adjust to 2.5±0.2 Vdc with CT202.

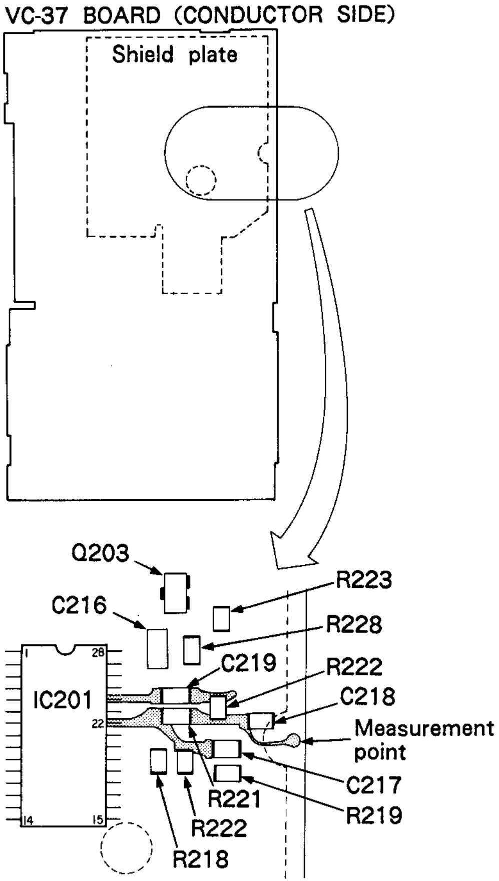

VC-37 BOARD (CONDUCTOR SIDE)
Shield plate
Q203
C216
R223
R228
C219
R222
C218
IC201
Measurement point
C217
R219
R221
R222
R218
1
28
22
14
15

Fig. 7-12.

7-2-5. HALL Set Adjustment (ZM-6 Board)

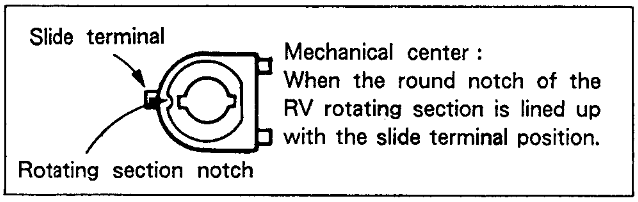
Subject	Arbitrary
Measurement Point	TP932
Measuring Instrument	Digital voltmeter
Adjusting Element	H GAIN : RV931 H OFFSET : RV932
Specified Value	When connected to GND : 4.0±0.15 Vdc When connected to 3V : 3.0±0.15 Vdc

Preparations :

1) Obtain a +3.0 Vdc regulated power supply and connect to TP931 only when indicated.

Adjusting method :

1) Set RV932 to its mechanical center (refer to Fig. 7-13.).
2) Adjust RV931 so the difference in TP932 voltage values is 1.0±0.1 Vdc when TP931 is connected to the "+3.0 Vdc power supply" and when TP931 is connected GND.
3) Connect TP931 to the "+3.0 Vdc power supply".
4) Use RV932 to set the voltage at TP932 to 3.0 ±0.1 Vdc.
5) Disconnect TP931 from the "+3.0 Vdc power supply", connect to GND, and confirm that the voltage at TP932 is 4.0±0.15 Vdc.
   Repeat steps 2) through 5) if the specified value is not satisfied.



Mechanical center : When the round notch of the RV rotating section is lined up with the slide terminal position.

Fig. 7-13.

7-2-6. Voltage Adjustment (VC-36 Board)

Subject	Optional
Measurement Point	TP101 (Pin ④ of IC101)
Measuring Instrument	Digital voltmeter
Adjusting Element	RV101
Specified Value	(Imager voltage) ±0.05 Vdc

Connection :

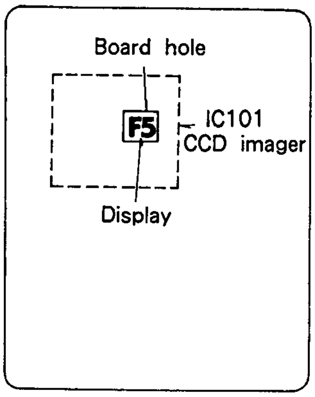
1) Connect TP102 to GND using a jumper wire.

Adjusting method :

1) Adjust to (Imager voltage) ±0.05 Vdc with RV101.
   Note : VSUB specified voltage is indicated by the two digits " integer symbol " and "decimal".

VC-36 board (Conductor side)

Integer symbol	Integer value
1	1
⋮	⋮
9	9
A	10
B	11
C	12
D	13
E	14
F	15
G	16
H	17
I	18
J	19
K	20
L	21



Example :
For F5 display, integer symbol is F→15, and decimal value is 5→0.5, so VSUB voltage is 15+0.5=15.5 (Vdc).

Fig. 7-14.

7-2-7. IRIS Set Adjustment (VC-37 Board)

Subject	Colour bar chart standard picture frame
Filter	ND filters 0.4 and 0.1
Measurement Point	TP251 (CCD OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV254
Specified Value	250±5 mV

Adjusting method :

1) With ND filter not attached, adjust signal level to 250±5 mV with RV254.(Be sure to end the adjustment by turning RV254 in the direction which reduces the signal level.)
2) Attach ND filter 0.5 (0.4 + 0.1) in front of the lens and confirm that the signal level changes smoothly.
3) Remove the ND filter and confirm that the signal level is 250±15 mV.
4) If the specifications are not satisfied, repeat steps 1) through 3).

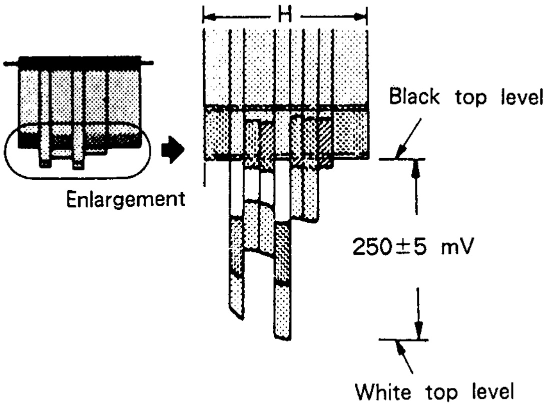

H
Black top level
Enlargement
250±5 mV
White top level

Fig. 7-15.

7-2-8. AGC Set Adjustment (VC-37 Board)

Subject	Colour bar chart standard picture frame
Measurement Point	TP252 (Y_L LINE)
Measuring Instrument	Oscilloscope
Adjusting Element	RV252 (AGC) RV255 (AGC MIN GAIN)
Specified Value	MIN GAIN : 380±10 mV AGC : 400±10 mV

Note : Set the following RV on the VC-37 board to mechanical center.
- RV253 (MAX GAIN)

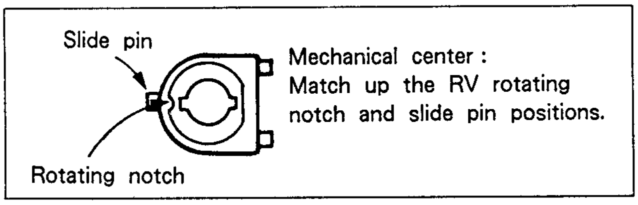

Slide pin
Mechanical center :
Match up the RV rotating notch and slide pin positions.
Rotating notch

Fig. 7-16.

Adjusting method :

1) Adjust RV252 so that the signal level becomes maximum.
2) Turn RV252 slowly in clockwise direction (↻) so that the signal level becomes minimum.
3) Adjust RV255 so that the signal level becomes 380±10 mV. (AGC MIN GAIN adjustment)
4) Adjust RV252 so that the signal level becomes 400±10 mV. (AGC adjustment)

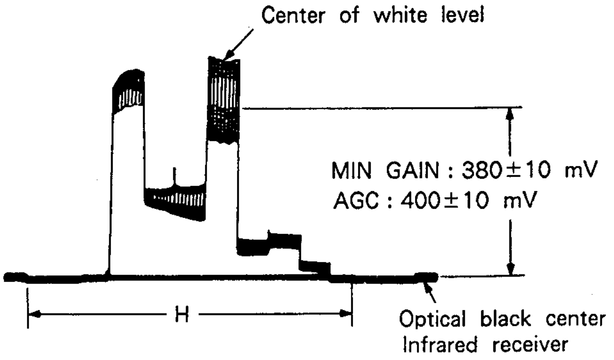

Center of white level
MIN GAIN : 380±10 mV
AGC : 400±10 mV
H
Optical black center
Infrared receiver

Fig. 7-17.

7-2-9. Matrix Adjustment

Connection :

1) Connect the following points with a jumper wire before performing matrix adjustment. TP253 (Pin ⑤ on the CP-21 board) and TP254 (GND)

1. Matrix gain 2 adjustment (CP-21/VC-37 boards)

Subject	Colour bar chart standard picture frame
Measurement Point	TP341 on VC-37 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV002 (MATRIX GAIN 2) on CP-21 board
Specified Value	"green" : "red" = 0.9 : 3.0

Adjusting method :

1) The WHITE BALANCE switch (S803 on the CG-2 board) should be set to ☼ (INDOOR) position.
2) Adjust "green" and "red" levels to 0.9 : 3.0 with RV002 on the CP-21 board.

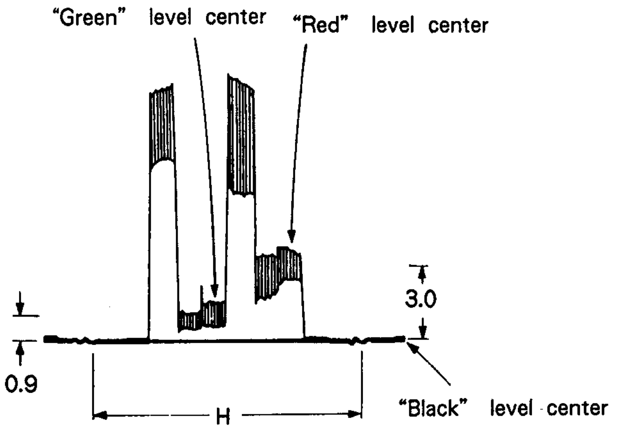

"Green" level center
"Red" level center
3.0
0.9
H
"Black" level center

Fig. 7-18.

2. Matrix gain 1 adjustment (CP-21/VC-37 boards)

Subject	Colour bar chart standard picture frame
Measurement Point	TP342 on VC-37 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV001 (MATRIX GAIN 1) on CP-21 board
Specified Value	"yellow" : "blue" = 1.8 : 3.0

Adjusting method :

1) The WHITE BALANCE switch (S803 on the CG-2 board) should be set to ☼ (INDOOR) position.
2) Adjust "yellow" and "blue" levels to 1.8 : 3.0 with RV001 on the CP-21 board .

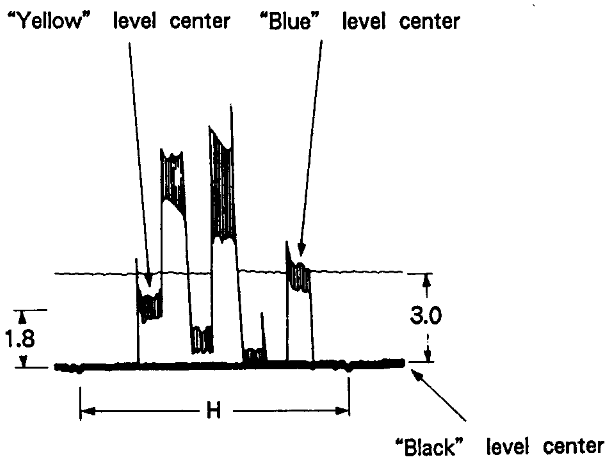

"Yellow" level center
"Blue" level center
1.8
3.0
H
"Black" level center

Fig. 7-19.

7-2-10. Carrier Balance Adjustment (VC-36 Board)

1. Vectorscope employing process

Subject	All black (place black cap over lens.)
Measurement Point	VIDEO OUT terminal
Measuring Instrument	Vectorscope
Adjusting Element	RV301
Specified Value	Black luminance point should match with the origin.

Adjusting method :

1) Match the black luminance point with the origin using RV301.

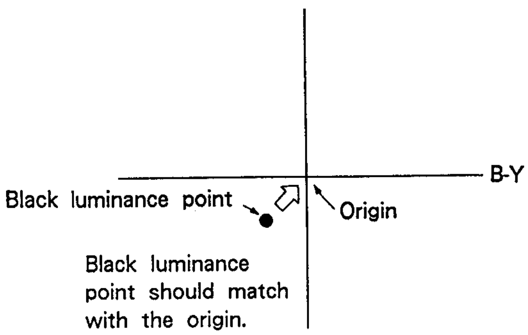

R-Y
B-Y
Black luminance point
Origin
Black luminance point should match with the origin.

Fig. 7-20.

2. Oscilloscope employing process

Subject	Colour bar chart standard picture frame
Measurement Point	TP345 (VIDEO OUT) on VC-37 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV301 on VC-36 board
Specified Value	4.43 MHz component of black portion should be minimum

Adjusting method :

1) Adjust RV301 on the VC-36 board so that the amplitude of the black portion is at minimum.

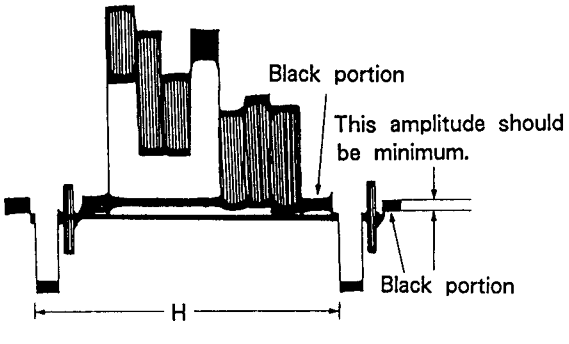

Black portion
This amplitude should be minimum.
Black portion
H

Fig. 7-21.

7-2-11. White Balance Adjustment (CP-21/VC-37 Board)

Subject	Colour bar chart standard picture frame
Measurement Point	CH1 (X) : TP342 (B-Y OUT) on VC-37 board CH2 (Y) : TP341 (R-Y OUT) on VC-37 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV003 (R GAIN) on CP-21 board RV004 (B GAIN) on CP-21 board
Specified Value	The black and white luminescent spots should match.

Adjusting method :

1) Confirm that the WHITE BALANCE switch (S803 on the CG-2 board) is set to ☼ (INDOOR) position.
2) Adjust RV003 and RV004 on the CP-21 board so that the black and white luminescent spots match.

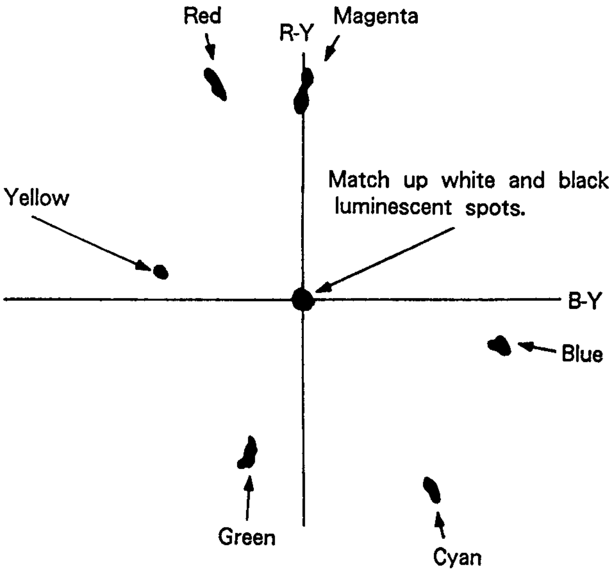

Red
R-Y
Magenta
Yellow
Match up white and black luminescent spots.
B-Y
Blue
Green
Cyan

Fig. 7-22.

7-2-12. Burst Phase and Burst Level Adjustment (VC-37 Board)

Subject	All black (Place black cap over lens.)
Measurement Point	TP345 (VIDEO OUT)
Measuring Instrument	Oscilloscope (Trigger slope : +)
Adjusting Element	RV347 (BURST LEVEL) and RV346 (BURST HUE)
Specified Value	Burst phase : should become a single line. Burst level : 140±5 mVp-p

Note : When performing colour reproductivity adjustment with a vectorscope , this adjustment becomes unnecessary.

Adjusting method :

1) Make burst waveform into a single line with RV346. There are 2 points in the rotating range of RV346 in which the waveform becomes a single line. Select the one in which the colour is reproduced correctly on the monitor screen.
2) Turn RV347 so that the burst amplitude becomes 140±5 mVp-p.

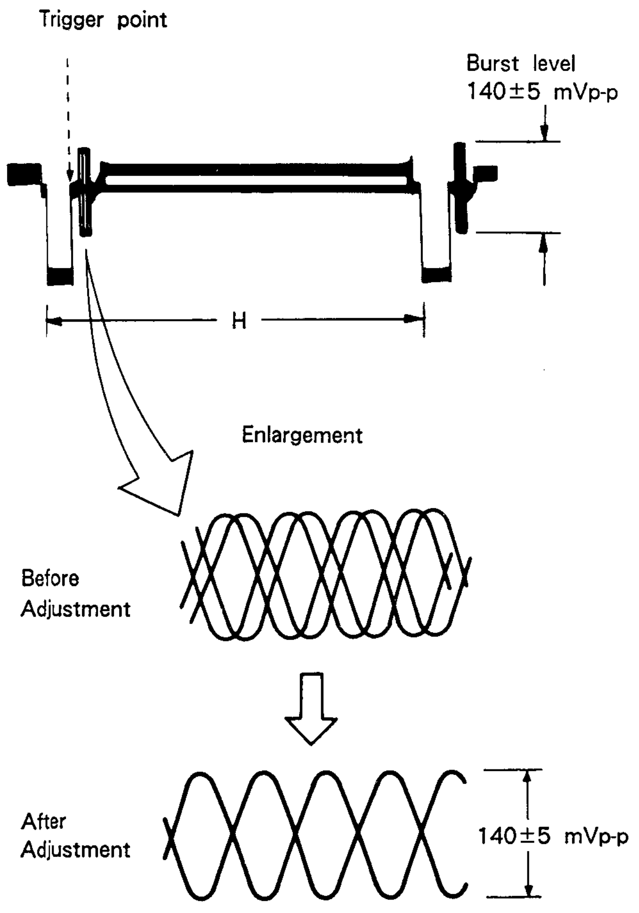


Fig. 7-23.

7-2-13. Colour Reproducibility Adjustment (using vectorscope) (CP-21/VC-37 Boards)

Subject	Colour bar chart standard picture frame
Measurement Point	VIDEO OUT terminal
Measuring Instrument	Vectorscope
Adjusting Element	VC-37 board • RV347 (BURST LEVEL) • RV346 (BURST HUE CP-21 board • RV006 (B-Y HUE) • RV007 (R-Y HUE • RV008 (B-Y GAIN) • RV009 (R-Y GAIN)
Specified Value	Each colour's luminescent spot must be within the colour reproducibility frame.

Note : 1) Confirm that the WHITE BALANCE switch (S803 on the CG-2 board) is set to ☼ (INDOOR) position.
2) Perform the adjustment after confirming that the burst luminescent spot is in the specified location and that the white lunimescent spot matches the original spot.(If the white luminescent spot does not match the original spot, perform white balance adjustment (RV003 and RV004 on the CP-21 board)).

Adjusting method :

1) Turn RV347 and RV346 on the VC-37 board and match the burst bright spot at the specified location (135° , 75%) on the vectorscope.
2) Place the "red" luminescent spot within the colour reproductivity frame with CP-21 board RV006 and RV009.
3) Place the "yellow" luminescent spot within the colour reproductivity frame with CP-21 board RV007 and RV008.
4) Repeat steps 2) and 3) until the colour luminescent spots are within the colour reproductivity frame.
5) Set the WHITE BALANCE switch (S803 on the CG-2 board) to ☀ (OUTDOOR) position.
6) Confirm that the white luminescent spot moves to the outdoor colour reproductivity frame.
7) Return the WHITE BALANCE switch to its original position.

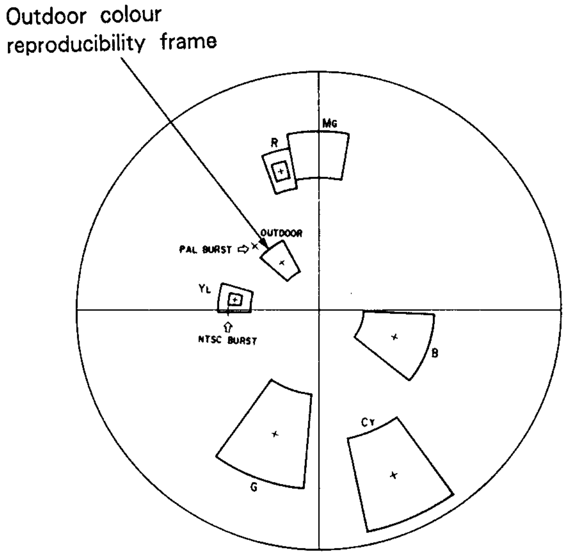


Fig. 7-24.

7-2-14. Colour Reproducibility Adjustment (using oscilloscope)

Note : Perform "1. Gain adjustment" and "2. Colour phase adjustment" after confirming that the WHITE BALANCE switch (S803 on the CG-2 board) should be set to ☼ (INDOOR) position.

1. Gain adjustment (CP-21/VC-37 boards)

Subject	Colour bar chart standard picture frame
Measurement Point	TP345 (CAM OUT) on VC-37 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV008 (B-Y GAIN) on CP-21 board RV009 (R-Y GAIN) on CP-21 board
Specified Value	"red" level : 240±16 mVp-p "yellow" level : 140±12 mVp-p

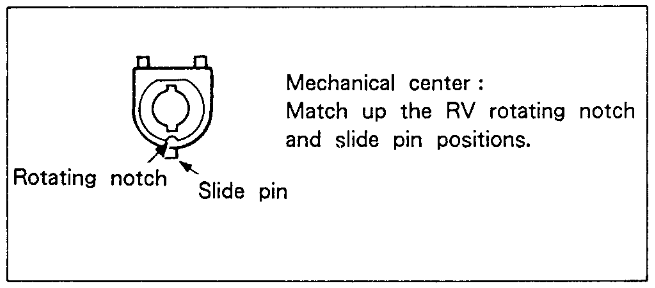


Fig. 7-25.

Adjusting method :

1) Set RV006 (B-Y HUE) and RV007 (R-Y HUE) on the CP-21 board to mechanical center.(See Fig. 7-25.)
2) Adjust "red" amplitude to 240±16 mVp-p with RV009 on the CP-21 board.(Fig. 7-26. ①)
3) Adjust "yellow" amplitude to 140±12 mVp-p with RV008 on the CP-21 board. (Fig. 7-26. ②)

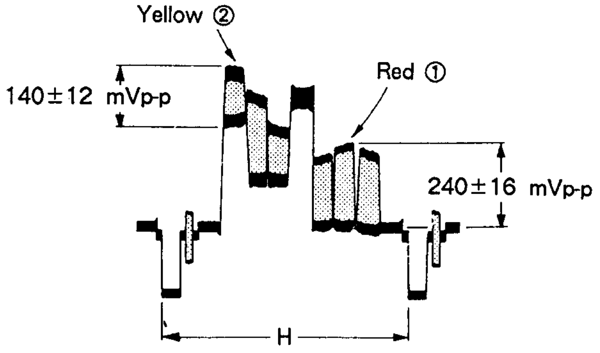


Fig. 7-26.

2. Colour phase adjustment (CP-21/VC-37 boards)

Subject	Colour bar chart standard picture frame
Measurement Point	CH1 (X) : TP342 (B-Y) on VC-37 board CH2 (Y) : TP341 (R-Y) on VC-37 board
Measuring Instrument	Oscilloscope (X-Y mode) • Use oscilloscope colour reproducibility frame.
Adjusting Element	RV006 (B-Y HUE) on CP-21 board RV007 (R-Y HUE) on CP-21 board
Specified Value	Each colour luminescent spot must be within the colour reproducibility frame. (See Fig. 7-27.)

Adjusting method :

1) Match up the black luminescent spot to the colour reproductivity frame original spot on the oscilloscope.
2) Confirm that the white and black luminescent spots match.(If not, confirm that white balance is in INDOOR mode, then perform white balance adjustment (RV003 and RV004 on the CP-21 board)).
3) Place the yellow and red luminescent spots within the colour reproductivity frame with RV006 and RV007 on the CP-21 board.
   (Confirm that other colour luminescent spots are within the colour reproductivity frames.)
4) Set the WHITE BALANCE switch (S803 on the CG-2 board) to ✵ (OUTDOOR) position.
5) Confirm that the white luminescent spot moves to the outdoor colour reproductivity frame.
6) Return the WHITE BALANCE switch to its original position.

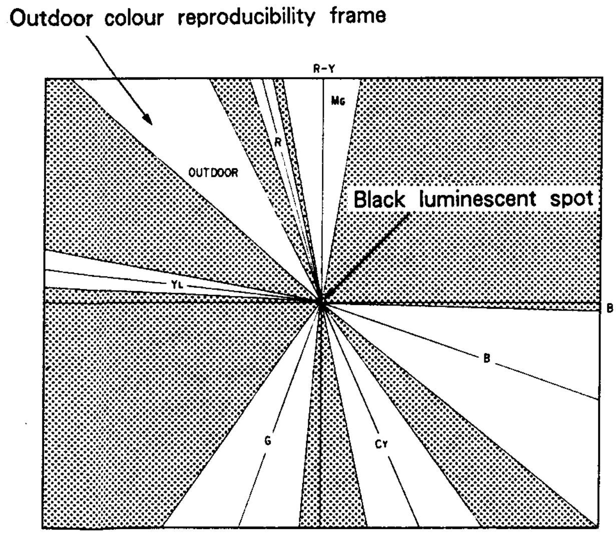

Outdoor colour reproducibility frame
R-Y
MG
R
OUTDOOR
Black luminescent spot
YL
B-Y
B
G
CY

Fig. 7-27.

7-2-15. SET UP Adjustment (VC-37 board)

Subject	All black (Place black cap over lens.)
Measurement Point	TP345 (VIDEO OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV344 (SET UP)
Specified Value	10±5 mV

Note : Light might enter through the clearance in the upper part of the CCD imager. Cover the upper part of the CCD imager with a black sheet etc.

Adjusting method :

1) Adjust SET UP level to 10±5 mV with RV344.

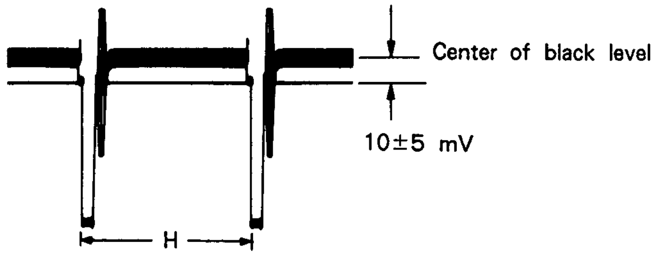

Center of black level
10±5 mV
H

Fig. 7-28.

7-2-16. SYNC Level Adjustment (VC-37 Board)

Subject	All black (Place black cap over lens.)
Measurement Point	TP345 (VIDEO OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV345 (SYNC LEVEL)
Specified Value	140±5 mVp-p

Adjusting method :

1) Adjust burst level to 140±5 mVp-p with RV345.

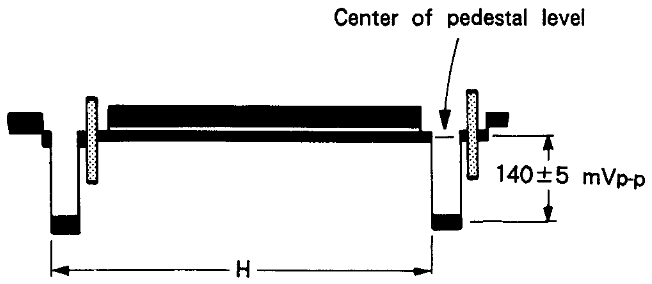

Center of pedestal level
140±5 mVp-p
H

Fig. 7-29.

7-2-17. Y Level Adjustment (VC-37 Board)

Subject	Colour bar chart standard picture frame
Measurement Point	TP345 (VIDEO OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV342 (Y LEVEL)
Specified Value	360±5 mV

Note : Turn RV343 (WC) fully clockwise (◯) and maximize TP345 signal level.

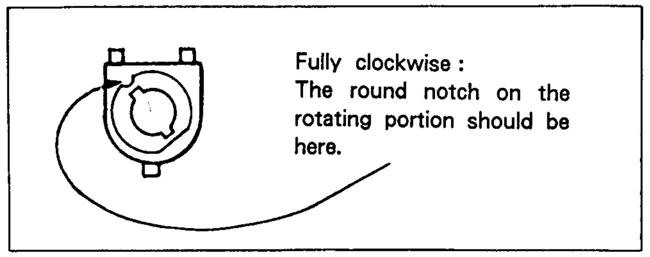

Fully clockwise :
The round notch on the rotating portion should be here.

Fig. 7-30.

Adjusting method :

1) Adjust Y level to 360±5 mV with RV342.
2) Perform aperture adjustment and white clip adjustment.

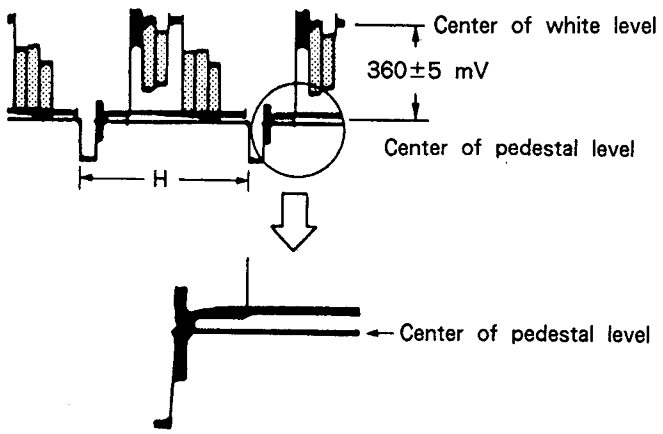

Center of white level
360±5 mV
Center of pedestal level
H
Center of pedestal level

Fig. 7-31.

7-2-18. Aperture Adjustment (VC-37 Board)

Subject	Colour bar chart standard picture frame
Measurement Point	TP345 (VIDEO OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV341 (APL)
Specified Value	15±5 mV

Adjusting method :

1) Adjust with RV341 so that the bottom peak between "green" and "white" is set at 15±5 mV above the pedestal level.

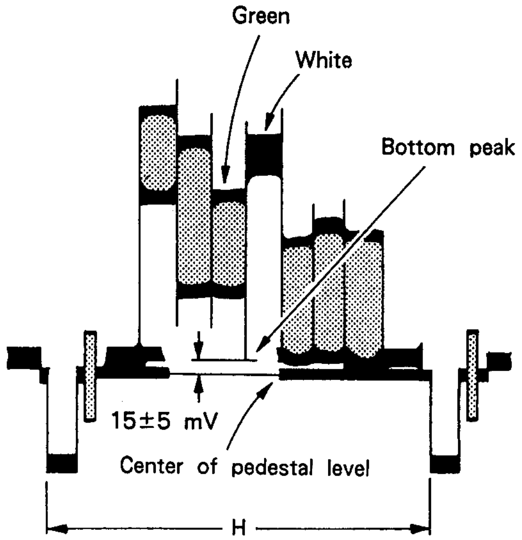

Green
White
Bottom peak
15±5 mV
Center of pedestal level
H

Fig. 7-32.

7-2-19. White Clip Adjustment (VC-37 Board)

Subject	High luminance pattern
Measurement Point	TP345 (VIDEO OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV343 (WHITE CLIP)
Specified Value	420±10 mV

Adjusting method :

1) Adjust the signal level to 420±10 mV with RV343.

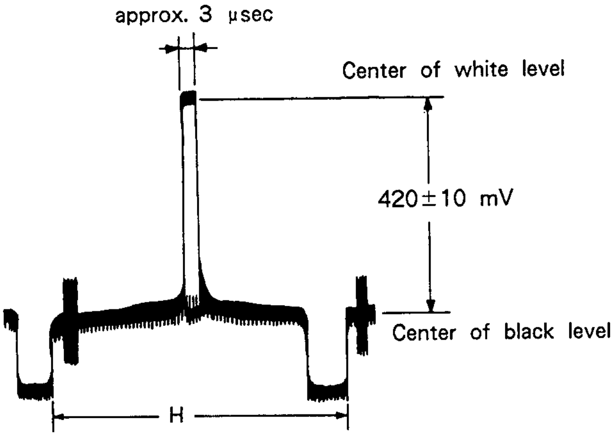


Fig. 7-33.

7-2-20. Max Gain Adjustment (VC-37 Board)

Subject	Colour bar chart standard picture frame
Filter	ND filters 0.9 (2 pcs), 0.4 (1 pcs)
Measurement Point	TP345 (VIDEO OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV253 (MAX GAIN)
Specified Value	180±5 mV

Adjusting method :

1) Mount ND filter 2.2 (0.9+0.9+0.4) on the lens.
2) Adjust to 180±5 mV with RV253.

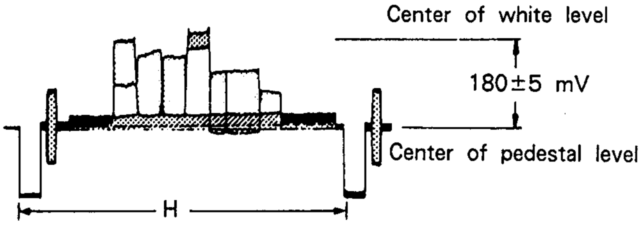


Fig. 7-34.

7-2-21. Chroma Pedestal Adjustment (CP-21/VC-37 Boards)

Subject	Colour bar chart standard picture frame
Filter	ND filters 0.9 (2 pcs), 0.4 (1 pcs)
Measurement Point	TP345 (VIDEO OUT) on VC-37 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV005 on CP-21 board
Specified Value	93±30 mVp-p

Adjusting method :

1) Attach ND filter 2.2 (0.9+0.9+0.4) on the lens.
2) Adjust RV005 so that the "cyan" level becomes 93±30 mVp-p.

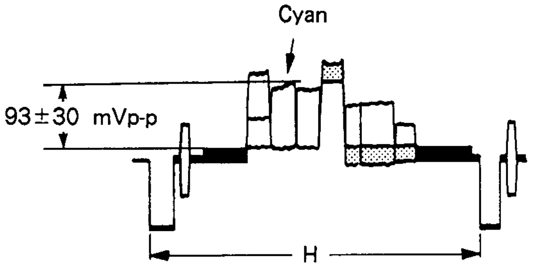


Fig. 7-35.

7-2-22. Auto-following White Balance Adjustment (AW-10 Board)

Subject	All white pattern *Note:1)
Measurement Point	CH1 : TP502 (R CONT) CH2 : TP501 (B CONT)
Measuring Instrument	Oscilloscope (DC range)
Adjusting Element	RV501
Specified Value	CH1 : "L" (0.5V) CH2 : "H" (1.9V)

Note : 1) Allow light to hit the white balance sensor (SB501) by passing through a white dispersing plate. A camera white lens cap can be used for the white dispersing plate.

2) Correct adjustment can not be done if light other than that from the pattern box hits the white balance sensor. Adjustment should preferably be done in a dark room, but if this is not possible, take the following measures before performing the adjustment.

1. Place the camera on black paper. (This is also necessary even when performing the adjustment in a dark room.)
2. Confirm the camera and pattern box are less than 0.5 m apart.(Focusing not required)
3. Cover the white balance sensor with black paper so that light other than that from the pattern box does not hit it.

Connection :

1) Perform the following connections and switch settings to set the unit to test mode.
   - Connect TP103 ($\overline{\text{WB INDOOR}}$) on the VC-36 board to GND using a jumper wire.
   - S803 on the CG-2 board (WHITE BALANCE) ········AUTO

Adjusting method :

1) Turn RV501 and confirm that CH1 takes the two values "L" (0.5 Vdc) and "H" (1.0 Vdc) and that CH2 takes the two values "L" (1.0 Vdc) and "H" (1.9 Vdc).
2) Slowly turn RV501 and stop at the point where CH1 is "L" (0.5 Vdc) and CH2 is "H" (1.9 Vdc).

7-2-23. Auto-following White Balance Operation Check

Subject	All white pattern *Note
Filter	Colour temperature correction filter C22
Measurement Point	Check on monitor TV
Measuring Instrument	

Note : Refer to Note : 2) in the preceding item.

Checking method :

1) Set for AUTO WHITE BALANCE mode with the WHITE BALANCE switch (S803 on the CG-2 board).
2) Cover the camera with black paper so that light other than that from the pattern box does not enter the white balance sensor (SB501).
3) Confirm that there is no colour on the monitor picture.
4) Place the colour temperature correction filter C22 on the white balance sensor.(Use black paper to confirm that light other than that form the filter does not enter.)
5) Confirm that the monitor picture becomes a light orange colour.(Response takes 2 to 3 seconds.)
6) Return the WHITE BALANCE switch to INDOOR mode.

7-2-24. Manual IRIS Check

Subject	Colour bar chart standard picture frame
Measurement Point	Check on monitor TV
Measuring Instrument	
Specified Value	CLOSE : All black OPEN : Colour bar chart fully illuminated

Checking method :

1) Turn IRIS control (RV801 on the CG-2 board) fully to the CLOSE side.
2) Confirm that the monitor TV picture is all black.
3) Turn IRIS control fully to the OPEN side.
4) Confirm that the fully illuminated colour bar chart on the monitor TV picture disappears.

7-3. CHARACTER GENERATOR SYSTEM ADJUSTMENT

7-3-1. System Clock Adjustment (FC-15 Board)

Mode	Standby
Subject	Optional
Measurement Point	Pin ⑫ on IC701 ($\overline{\text{SCK}}$)
Measuring Instrument	Frequency counter
Adjusting Element	RV703
Specified Value	165±5 kHz

Connection :

1) Make jumper wire connections at the two following locations on the FC-15 board.
   - Pin ⑱ of IC701 ($\overline{\text{CAM DOWN}}$) —— GND
   - Pin ⑲ of IC701 ($\overline{\text{TEST}}$) —— GND

Adjusting method :

1) Switch CAMERA POWER (S706) on, and engage a standby mode.
2) Adjust to 165±5 kHz with RV703.

7-3-2. Title Position Adjustment (CG-2 Board)

Subject	Totally black (with lens covered with a black cap)
Measurement Point	TP345 (VIDEO OUT) on VC-37 board
Measuring Instrument	Oscilloscope
Adjusting Element	CT801 on CG-2 board
Specified Value	A=B

Adjusting method :

1) Confirm that the dot signal is output by pressing TITLE MAIN switch (S810 on the CG-2 board) more than 3 seconds.
2) Adjust CT801 on CG-2 board so that the widths of A section and B section are equal.

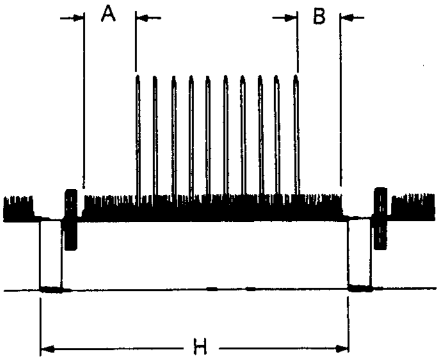


Fig. 7-36.

7-3-3. Clock Frequency Adjustment (FC-15 Board)

Mode	Standby
Subject	Arbitrary
Measurement Point	Pin ㊲ on IC701
Measuring Instrument	Frequency counter
Adjusting Element	CT701
Specified Value	8192.00±0.05 Hz

Connections :

1) Connect the following 2 places by jumper wire.
   - Pin ⑱ of IC701 ($\overline{\text{CAM DOWN}}$) —— GND
   - TP703 (Pin ⑲ of IC701 ($\overline{\text{TEST}}$)) —— GND

Adjusting method :

1) Turn ON the CAMERA POWER switch (S706) to set to the standby mode.
2) Confirm that the character shown in Fig. 7-37 is displayed on the monitor TV or EVF screen.
3) Adjust by CT701 to 8192.00±0.05 Hz.

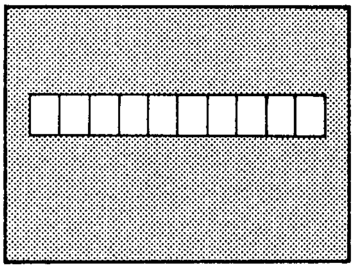


Fig. 7-37.

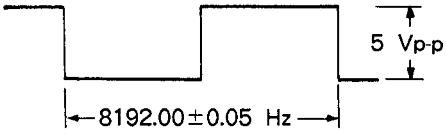


Fig. 7-38.

7-3-4. Wiper Adjustment (FC-15 Board)

Subject	Arbitrary
HT adjustment	
Measurement Point	Pin ⑭ of IC702
Measuring Instrument	Oscilloscope
Adjusting Element	RV702 (HT)
Specified Value	4.6±0.6 μsec
VT adjustment	
Measurement Point	Confirmation on monitor TV screen
Measuring Instrument	
Adjusting Element	RV701 (VT)
Specified Value	2.0±0.1 msec

Connections :

1) Supply DC voltage of 2.50±0.05 Vdc to Pin ① of W701 (A. FADER) on the FC-15 board from a regulated power supply.
2) Connect TP703 (Pin ⑲ of IC701 (TEST)) to GND with a jumper wire.

Adjusting method :

1) Connect the oscilloscope to Pin ⑭ of IC704 and monitor at the H period (H : 20 μsec/div).
2) Adjust RV702 so that the pulse width of the HT pulses being generated is 4.6±0.6 μsec.

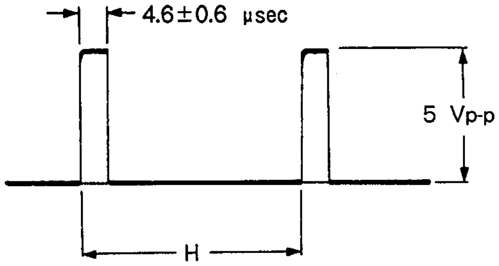


Fig. 7-39.

3) Set the oscilloscope to the V period.(H : 5 msec /div)
4) Adjust RV701 so that the pulse width of the VT pulses being generated is 2.1±0.1 msec.

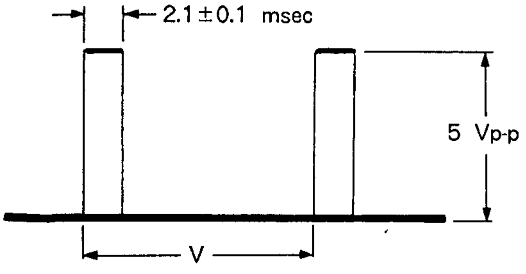


Fig. 7-40.

7-3-5. Title White Level Adjustment (CG-2 Board)

Subject	Totally black (with lens covered with a black cap)
Measurement Point	TP345 (VIDEO OUT) on VC-37 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV802 on CG-2 board
Specified Value	280±20 mV

Adjusting method :

1) Confirm that the dot signal is output by pressing TITLE MAIN switch (S810 on the CG-2 board) more than 3 seconds.
2) Adjust RV802 on CG-2 board so that the dot siganl is 280±20 mV.

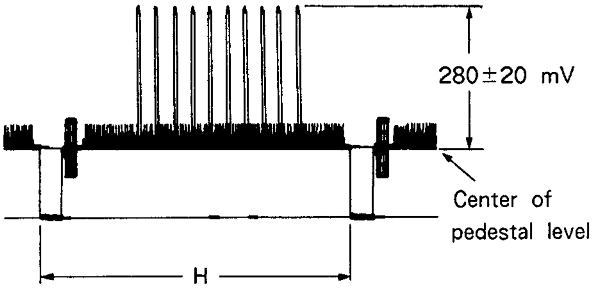


Fig. 7-41.

7-4. AUTO FOCUS SYSTEM ADJUSTMENT

7-4-1. AF DC-DC Converter Output Voltage Adjustment (CC-13 Board)

Subject	Arbitrary
Measurement Point	Pin ① of CN901
Measuring Instrument	Didital voltmeter
Adjusting Element	RV903
Specified Value	6.1±0.1 Vdc

Adjusting method :

1) Adjust to 6.0±0.1 Vdc using RV903.

7-4-2. Offset Adjustment (AF-43 Board)

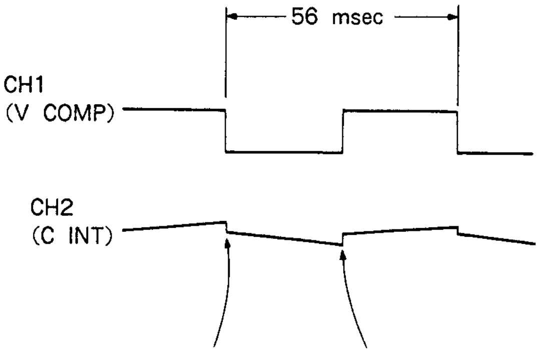
Subject	Arbitrary
Measurement Point	CH1 : Pin ⑧ of IC011 (V COMP) CH2 : Pin ⑦ of IC011 (C INT) • Refer to Fig. 7-43.
Measuring Instrument	Oscilloscope Trigger source : CH1
Adjusting Element	A−B level : RV011 A+B level : RV012
Specified Value	Flat waveform at Pin ⑦ of IC011 (C INT)

Preparations :

1) Set the FOCUS switch to the AUTO position.
2) Connect Pin ⑲ (MODE) of IC011 and GND using a jumper wire to make emission of infrared light continuous.
3) Cover the infrared receiver section (D001 on the AF-44 board) with black paper, etc., to prevent the input of infrared light.

Adjusting method :

1) Make the waveform from Pin ⑦ (C INT) of IC011 flat using RV011 and RV012.



Eliminate stages in the falling section by RV011

Eliminate stages in the rising section by RV012

Fig. 7-42.

AF-43 board (Conductor side)

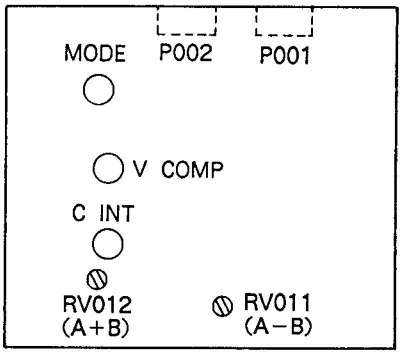


Fig. 7-43.

7-4-3. Auto Focus Distance Measurement Adjustment

Subject	Siemens star (At 2.0 m directlyin front of lens reference plane ("ф" mark))
Measurement Point	Check with monitor TV
Measuring Instrument	
Adjusting Element	Screw for AF adjustment
Specified Value	Focus mark position is with in range of ±2.0 mm in relation to manual focusing

Switch settings :
- ZOOM lever····················TELE position (88 mm)

Adjusting method :
1) Confirm that the Siemens star is at a distance of 2.0 m directly in front of the lens reference plane ("ф" mark).
2) Set the FOCUS switch to the MANUAL position.
3) Adjust the focus manually and confirm that the focus mark is within the range shown in Fig. 7-44. Make a note of the focus mark position at this time.(When the specified value cannot be satisfied, perform "Flange Back Adjustment".)
4) Set the FOCUS switch to the AUTO position.
5) Rotate AF adjustment screw to line up the focus mark with the position noted in 3).
6) Set the focus ring to the far position (∞) and release your hand.
7) Confirm that the focus mark is within ±2.0 mm of the position noted in 3).
8) Set the focus ring to the near position (1.2) and release your hand.
9) Confirm that the focus mark is within ±2.0 mm of the position noted in 3).

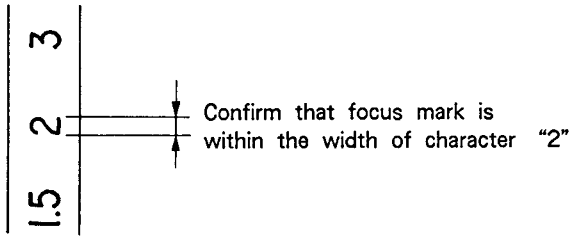

3
2
1.5
Confirm that focus mark is within the width of character "2"

Fig. 7-44.

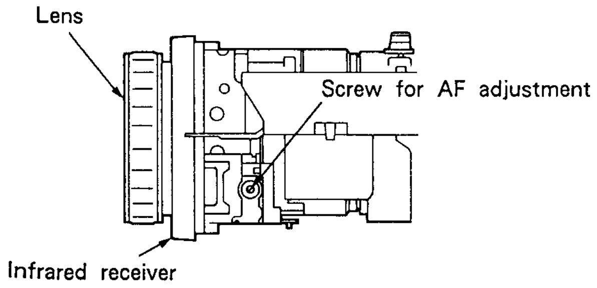


Fig. 7-45.

7-4-4. Motor Voltage Adjustment

Subject	Arbitrary (at 0.9 m directly in front of lens reference plane ("ф" mark))
Measuring Instrument	Stopwatch
Specified Value	2.0±0.5 sec.

Zoom lever setting :
- Vicinity of 20 mm

Adjusting method :
1) Set to the MANUAL mode using the FOCUS switch (S801 on the CG-2 board).
2) Set the focus ring to the infinity side (∞ side).
3) Press the FOCUS switch.
4) Measure the time which elapses from the instant the FOCUS switch is pressed to the focus ring rotates and reaches the close side (1.2 m side).
5) Confirm that the measured value is within the specified value.

7-5. ELECTRONIC VIEW FINDER (EVF) SYSTEM ADJUSTMENT

7-5-1. Horizontal Tilt Adjustment

Mode	Playback
Signal	Alignment tape : For operational checks (WR5-3CSP) Monoscope section
Specified Value	See Fig. 7-47.

Adjusting method :

1) By turning RV705 (BRIGHT), adjust for a luminance level that provides appropriate visibility of the picture tube.
2) Loosen the DY (deflection yoke) tightening band.
3) By turning DY, achieve a horizontal position of the image.
4) Position the DY rear end 52.5±0.3 mm away from the picture tube face plate.
5) Retighten the DY tightening band (exercising care against any excessive tightening).

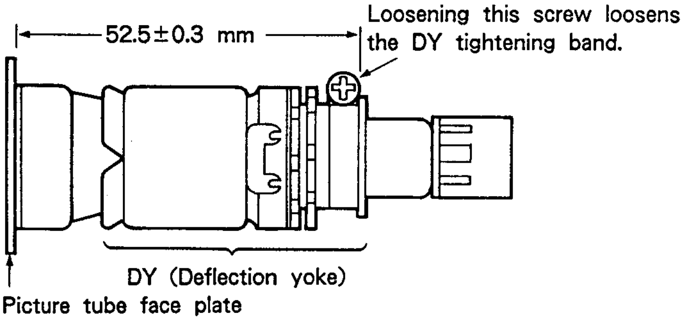
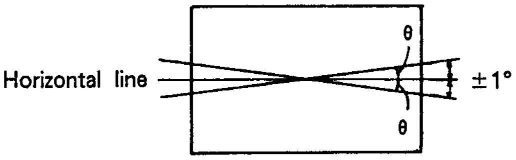

52.5±0.3 mm
Loosening this screw loosens the DY tightening band.
DY (Deflection yoke)
Picture tube face plate

Fig. 7-46.


Horizontal line
θ
θ
±1°

Specified value :
Image orientation to be within ±1° of horizontal line

Fig. 7-47.

7-5-2. Centering Adjustment

Mode	Playback
Signal	Alignment tape : For operational checks (WR5-3CSP) Monoscope section
Specified Value	See Fig. 7-49.

Adjusting method :

1) By operating centering magnets, provide the image with even peripheral margins, both horizontally and vertically.

Note : Since the centering position is affected by the earth magnetism, turn the equipment over 360° horizontally, and make adjustments at the orientation that exhibits median displacements of the image.

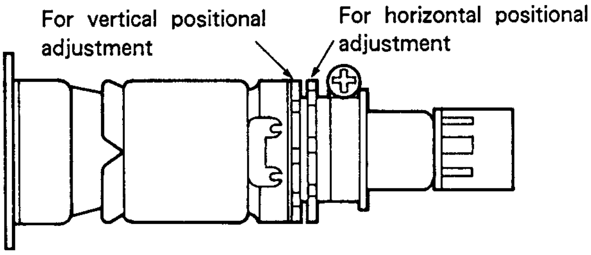
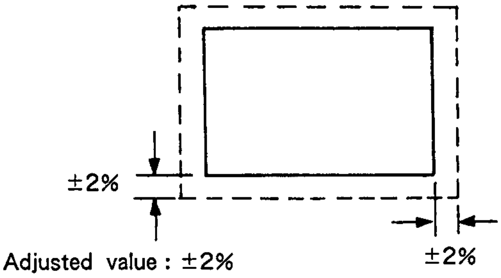

For vertical positional adjustment
For horizontal positional adjustment

Fig. 7-48.



Adjusted value : ±2%

Fig. 7-49.

7-5-3. Horizontal Oscillating Frequency Adjustment (VF-7 Board)

Mode	Playback
Signal	Alignment tape : For operational checks (WR5-3CSP)
Measurement Point	Positive terminal of C708
Measuring Instrument	Digital voltmeter or oscilloscope (DC range)
Adjusting Element	RV702
Specified Value	2.30±0.1 Vdc

Adjusting method :

1) By turning RV702, adjust for a 2.30±0.1 Vdc terminal voltage.

7-5-4. Horizontal Amplitude Adjustment (VF-7 Board)

Mode	Playback
Signal	Alignment tape : For operational checks (WR5-3CSP) Monoscope section
Adjusting Element	C718, C719
Specified Value	6±3%

Adjusting method :

1) By turning RV704, focus the image.
2) By turning RV701, align upper and lower edges of the monoscope image with those of the screen.
3) By turning RV705, attain a normal brightness level.
4) To achieve 6±3% horizontal overscans (half side), short-circuit or open the patterns (A and B) for H size adjusting capacitors (C718 and C719), one at a time until the overscan level is achieved.(See Fig. 7-51.)

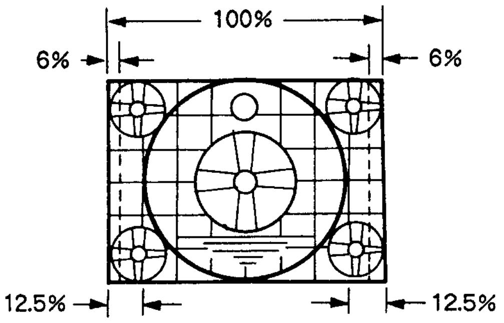
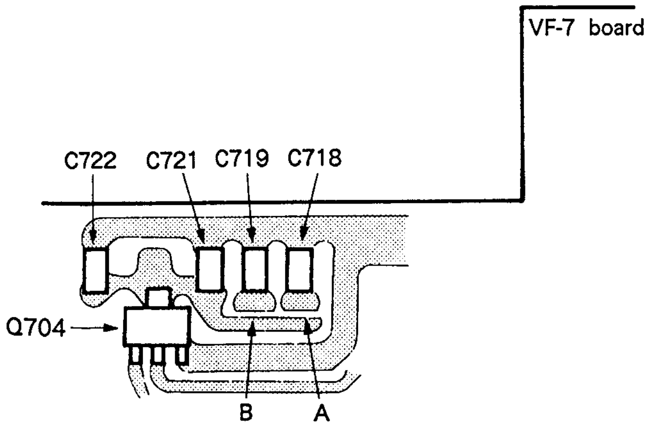


Fig. 7-50.



A	B	H size
Open	Open	Small
Short-circuit	Open	↓
Open	Short-circuit	
Short-circuit	Short-circuit	Large

Fig. 7-51.

7-5-5. Vertical Amplitude Adjustment (VF-7 Board)

Mode	Playback
Signal	Alignment tape : For operational checks (WR5-3CSP) Monoscope section
Adjusting Element	RV701
Specified Value	6±3%

Adjusting method :

1) By turning. RV701, adjust for 6±3% vertical overscans (half side).

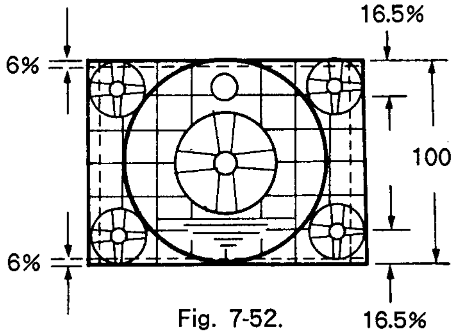


Fig. 7-52.

7-5-6. Brightness, Contrast Adjustments (VF-7 Board)

Mode	Playback
Signal	Alignment tape : For operational checks (WR5-3CSP) Monoscope section
Adjusting Element	Brightness : RV705 Contrast : RV703

Adjusting method :

1) By turning RV705 and RV703 alternately, adjust for the valid display of light and dark areas of a gray scale.(The light area should not be made light enough for a fuzzy display of cross-hatches within the monoscopic circle, be sure to maintain the brightness of the dark area in a degree in which discrimination between the darkest area and second darkest area can scarcely be made.)

7-5-7. Focus Adjustment (VF-7 Board)

Mode	Playback
Signal	Alignment tape : For operational checks (WR5-3CSP) Monoscope section
Adjusting Element	RV704

Adjusting method :

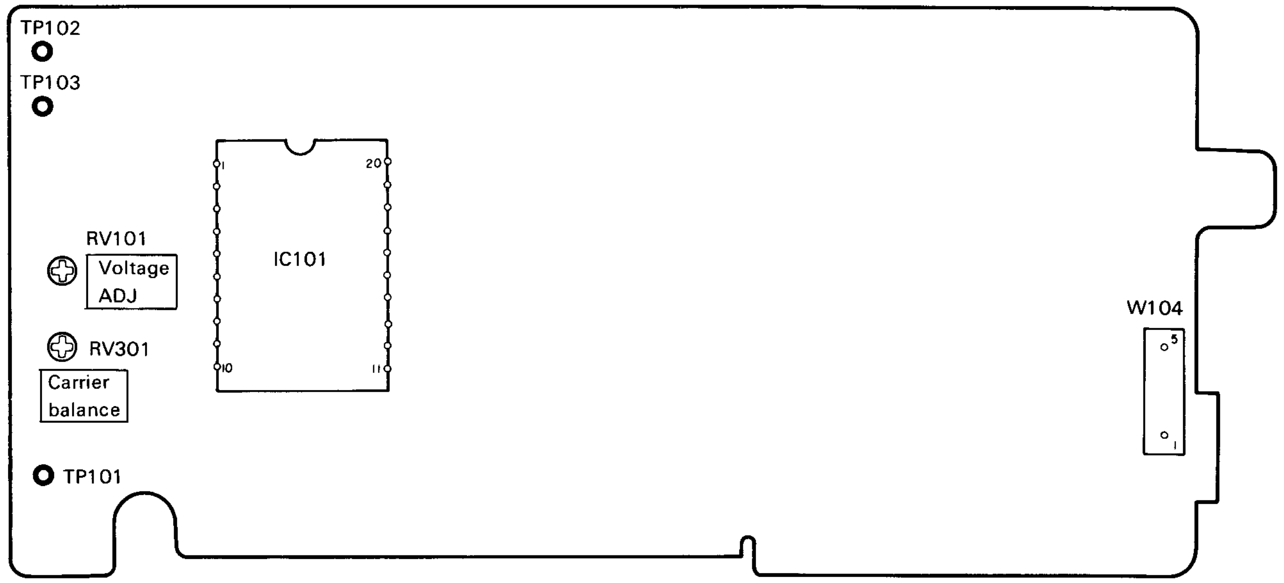
1) By turning RV704, adjust for the optimally focused images.

7-5-8. Horizontal and Vertical Amplitude Checks

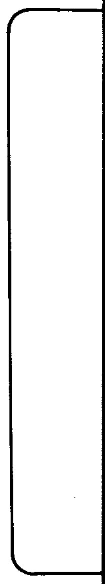
Specifications should have been met by "7-5-4. Horizontal amplitude adjustment" and "7-5-5. Vertical amplitude adjustment", but if they are not, readjustments should be made. In the latter case, "7-5-6. Brightness, contrast adjustments" and "7-5-7. Focusing adjustment" should also be made over again.

ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

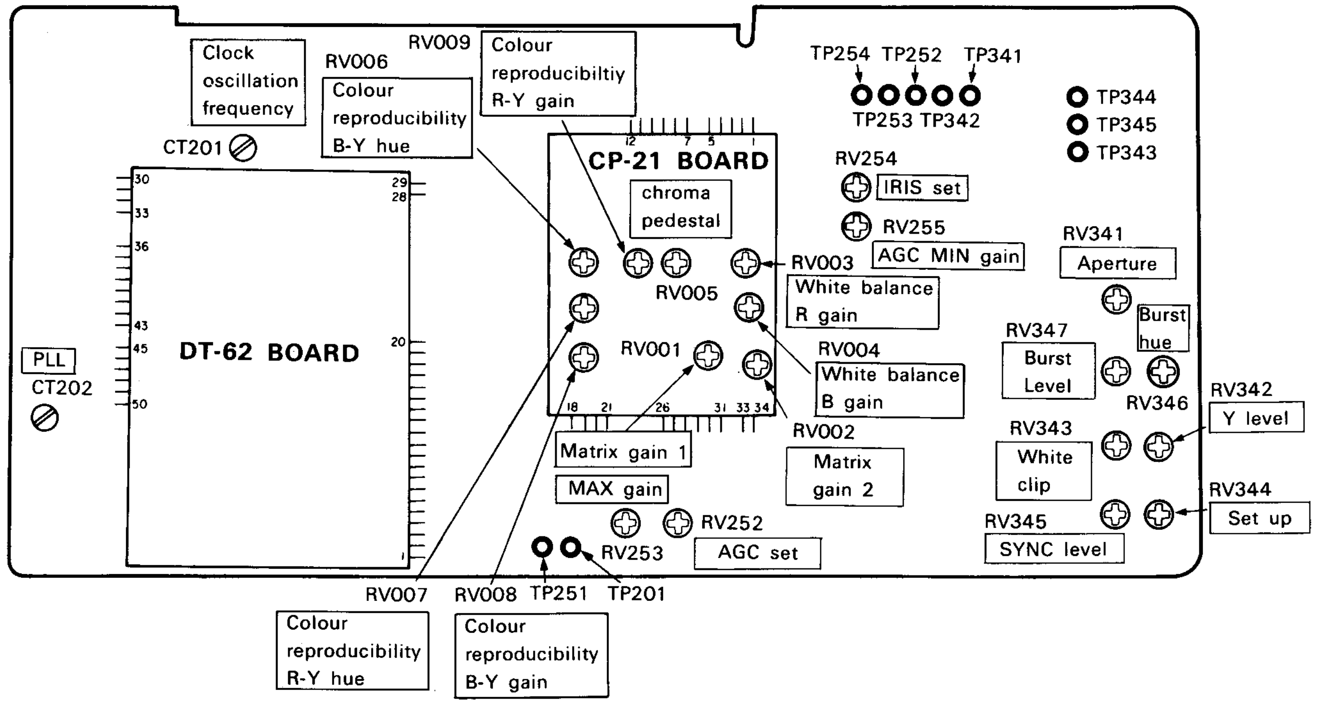
VC-36 BOARD (COMPONENT SIDE)


TP102
TP103
RV101
Voltage ADJ
RV301
Carrier balance
TP101
IC101
1
20
10
11
W104
5
1

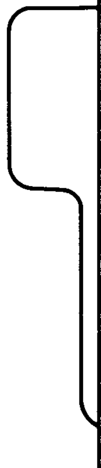
ZM-6 B



VC-37 BOARD (COMPONENT SIDE)

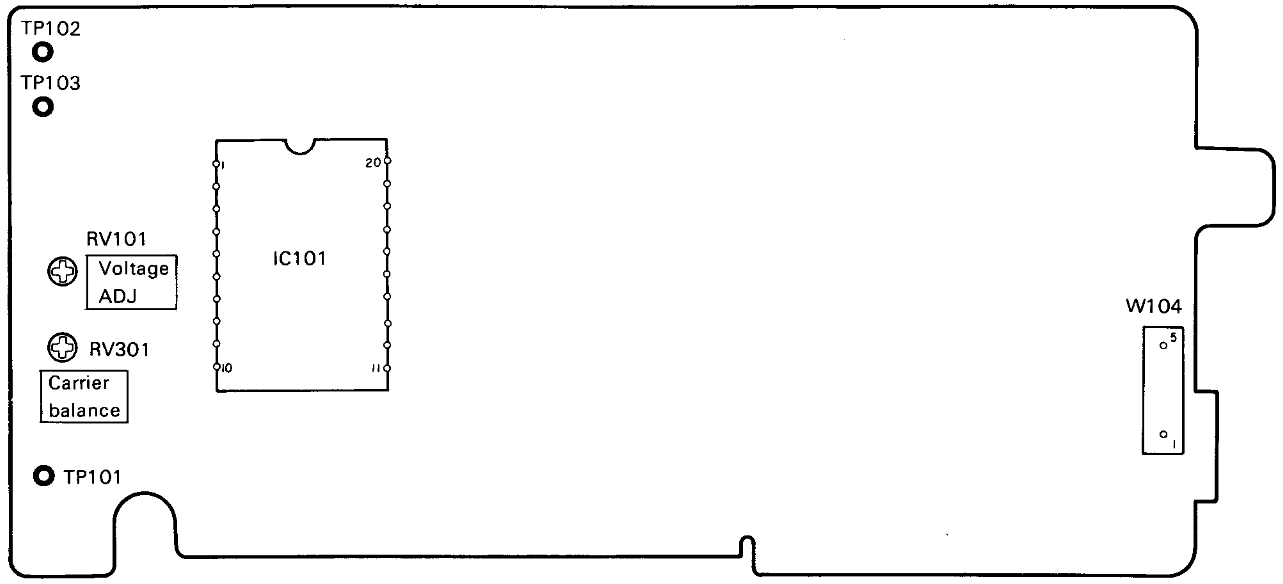

Clock oscillation frequency
RV006
Colour reproducibility B-Y hue
RV009
Colour reproducibiltiy R-Y gain
CT201
TP254
TP252
TP341
TP253
TP342
TP344
TP345
TP343
CP-21 BOARD
chroma pedestal
RV254
IRIS set
RV255
AGC MIN gain
RV341
Aperture
RV003
White balance R gain
RV005
Burst hue
RV347
Burst Level
RV001
RV004
White balance B gain
RV346
RV342
Y level
DT-62 BOARD
PLL
CT202
RV002
Matrix gain 2
Matrix gain 1
MAX gain
RV343
White clip
RV344
Set up
RV252
RV345
RV253
AGC set
SYNC level
RV007
RV008
TP251
TP201
Colour reproducibility R-Y hue
Colour reproducibility B-Y gain
30
33
36
43
45
50
29
28
20
1
12
7
5
18
21
26
31
33
34

CG-2 B

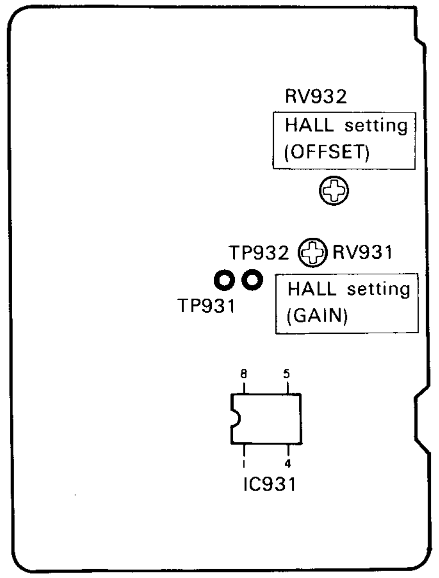


ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

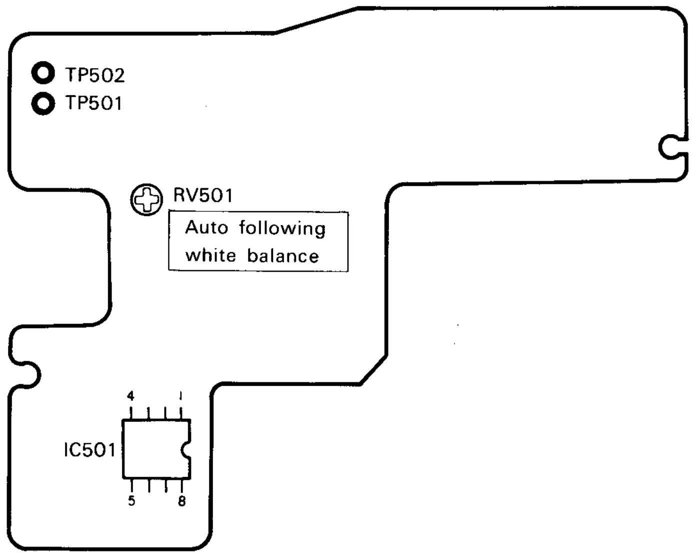
VC-36 BOARD (COMPONENT SIDE)


TP102
TP103
RV101
Voltage ADJ
RV301
Carrier balance
TP101
IC101
W104

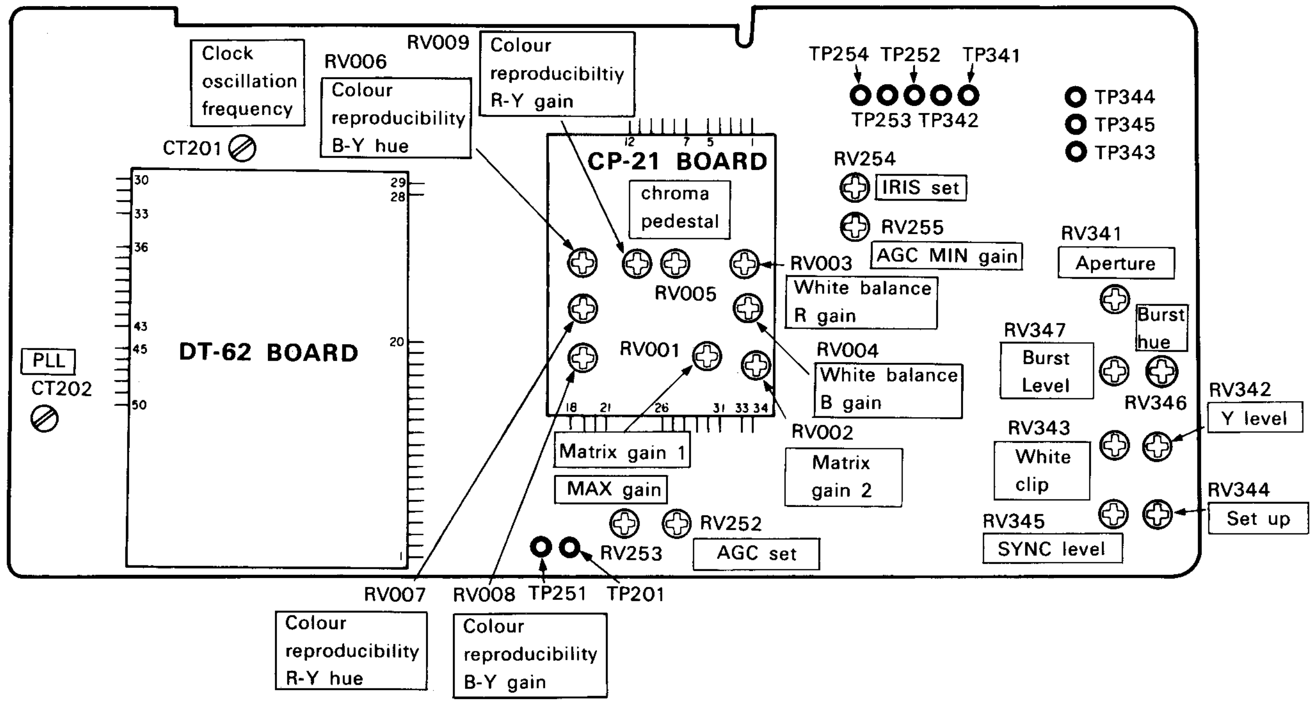
ZM-6 BOARD (COMPONENT SIDE)


RV932
HALL setting (OFFSET)
TP932
RV931
TP931
HALL setting (GAIN)
IC931

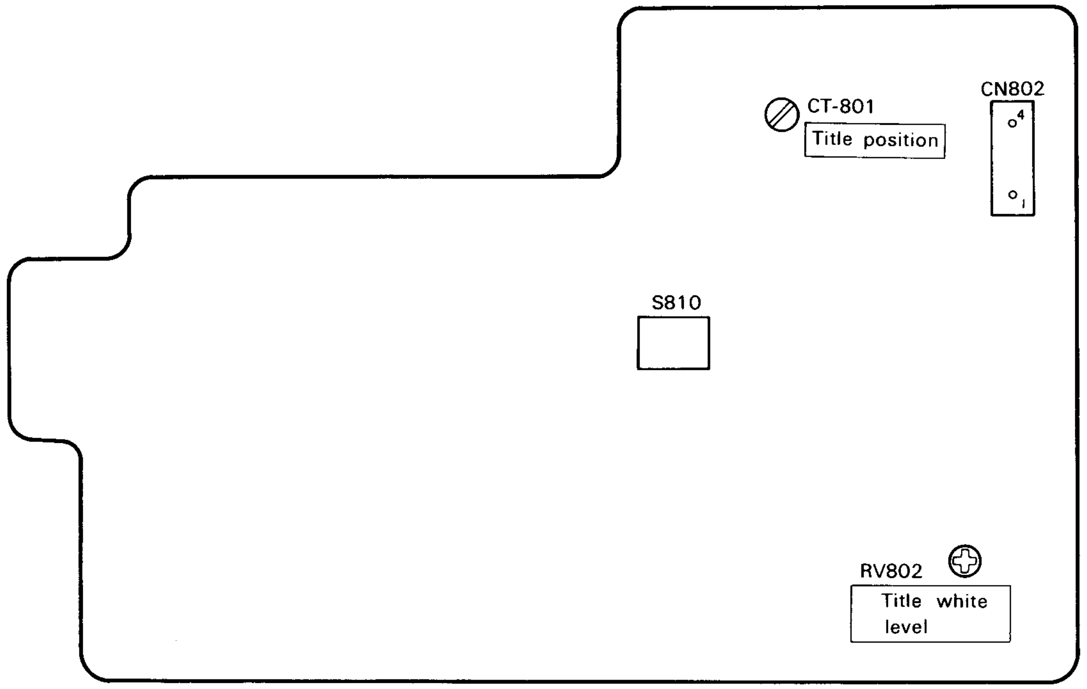
AW-10 BOARD (COMPONENT SIDE)


TP502
TP501
RV501
Auto following white balance
IC501

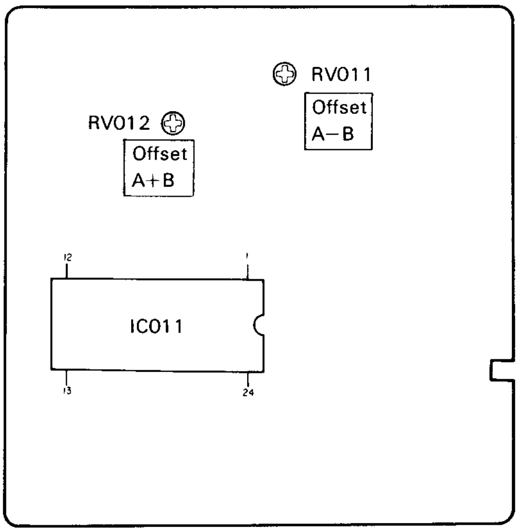
VC-37 BOARD (COMPONENT SIDE)


Clock oscillation frequency
RV006
RV009
Colour reproducibiltiy R-Y gain
Colour reproducibility B-Y hue
CT201
TP254 TP252 TP341
TP253 TP342
TP344
TP345
TP343
CP-21 BOARD
chroma pedestal
RV254
IRIS set
RV255
AGC MIN gain
RV341
Aperture
RV003
White balance R gain
RV005
Burst hue
RV347
Burst Level
RV001
RV004
White balance B gain
RV346
RV342
Y level
DT-62 BOARD
PLL
CT202
RV002
Matrix gain 2
Matrix gain 1
MAX gain
RV343
White clip
RV344
Set up
RV252
RV253
AGC set
RV345
SYNC level
RV007
RV008
TP251
TP201
Colour reproducibility R-Y hue
Colour reproducibility B-Y gain

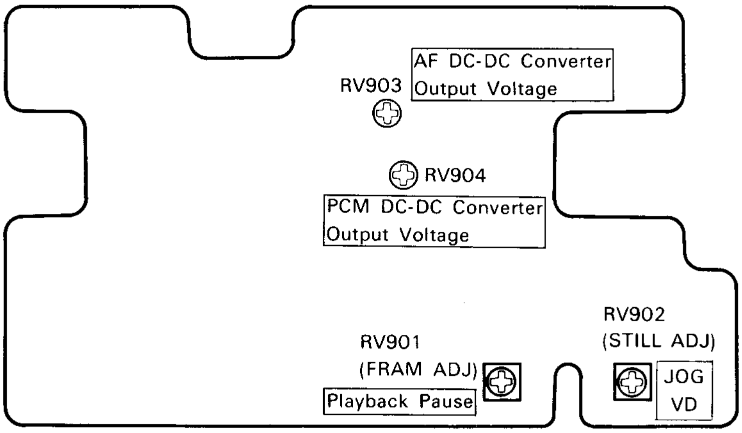
CG-2 BOARD (COMPONENT SIDE)


CT-801
Title position
CN802
S810
RV802
Title white level

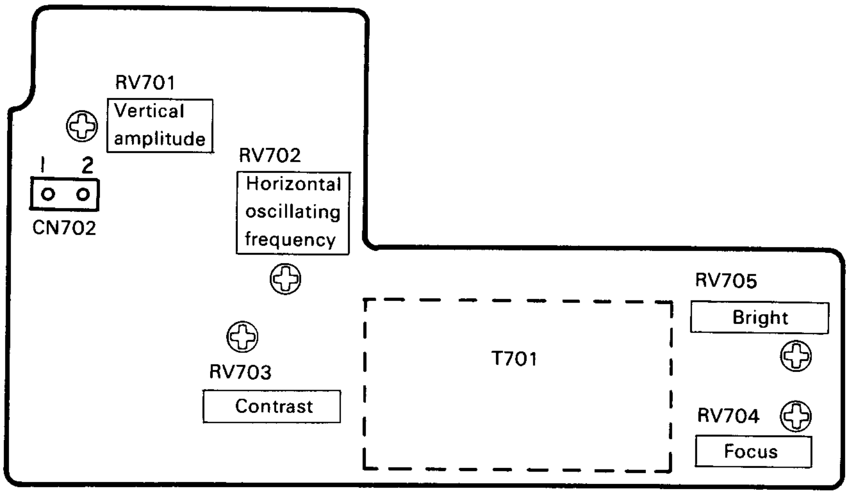
AF-43 BOARD (COMPONENT SIDE)


RV011
Offset
A−B
RV012
Offset
A+B
12
1
IC011
13
24

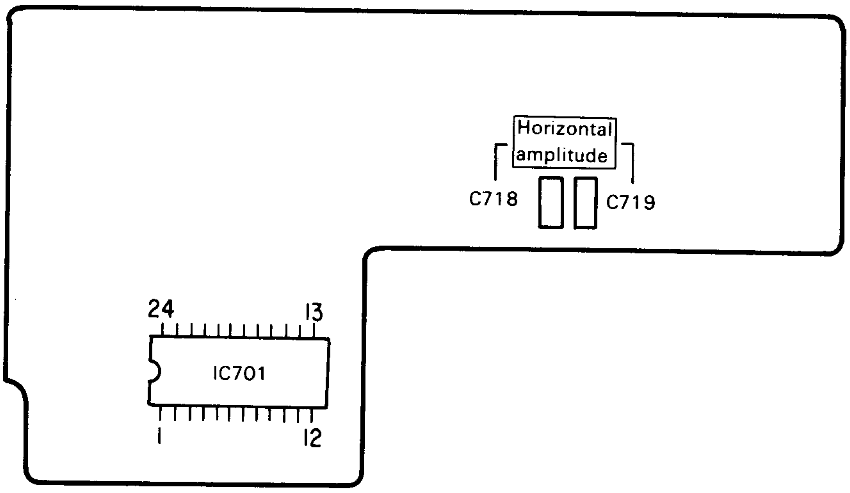
CC-13 BOARD (COMPONENT SIDE)


RV903
AF DC-DC Converter
Output Voltage
RV904
PCM DC-DC Converter
Output Voltage
RV901
(FRAM ADJ)
Playback Pause
RV902
(STILL ADJ)
JOG
VD

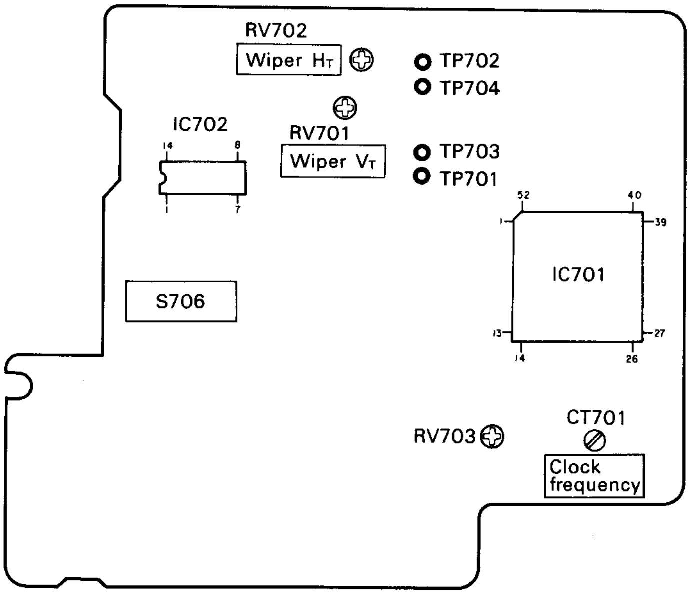
VF-7 BOARD (COMPONENT SIDE)

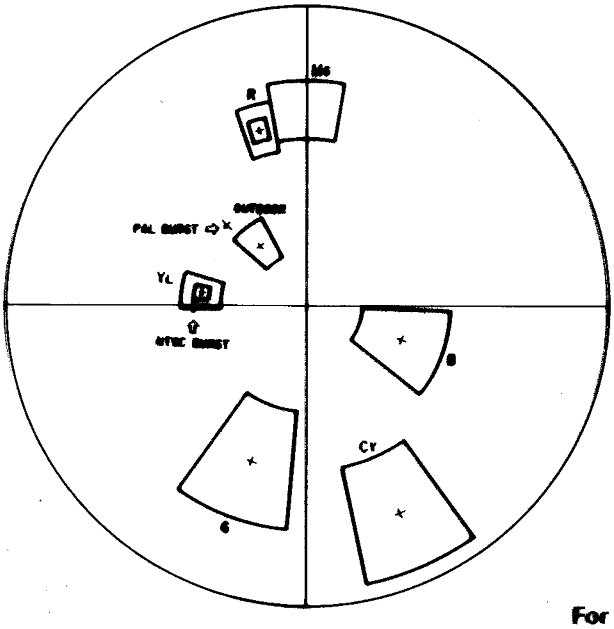

RV701
Vertical amplitude
1 2
CN702
RV702
Horizontal oscillating frequency
RV703
Contrast
T701
RV705
Bright
RV704
Focus

VF-7 BOARD (CONDUCTOR SIDE)

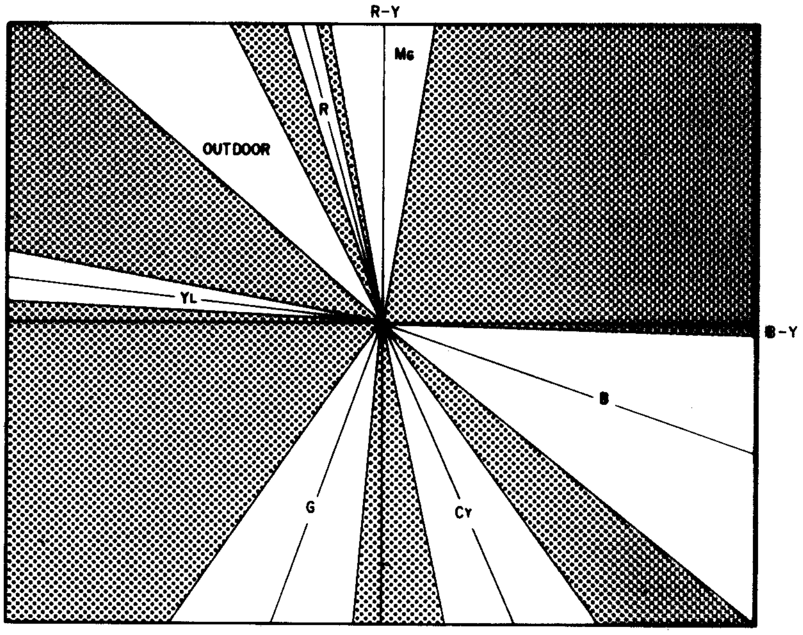

Horizontal amplitude
C718
C719
24
13
IC701
1
12

FC-15 BOARD (COMPONENT SIDE)


RV702
Wiper H_T
TP702
TP704
IC702
14
8
1
7
RV701
Wiper V_T
TP703
TP701
52
40
1
39
IC701
13
27
14
26
S706
RV703
CT701
Clock frequency


MG
R
OUTDOOR
PAL BURST ⇨
YL
NTSC BURST
B
CY
G

For Vectorscope


R-Y
MG
R
OUTDOOR
YL
B-Y
B
G
CY

For Oscilloscope

SECTION 8
MECHANICAL ADJUSTMENTS

8-1. PREPARATION ITEMS FOR MECHANISM SECTION CHECKING, ADJUSTMENT AND REPLACEMENT

Note : Regarding removal of cabinet and respective boards, see Section 2. DISASSEMBLY.

8-1-1. Mounting of Cassette Compartment Assembly (See Fig. 8-1a)

1) Mount DEW assembly ❶ with screw ❷.
2) Mount the cassette compartment assembly ❸ refer to Fig. 8-1a, and tighten the four screws ❹ in the order shown in Fig. 8-1b.
   (At this point, care should be taken not to hit cassette compartment assembly ❸, so set the eject disk ❺ in the direction of arrow.)
3) Hook the harness on claw ❻.
4) Mount leaf switch ❼ with screw ❽.
5) See Section 2. DISASSEMBLY 2-11, and mount the DR-45 board.
6) See Section 2. DISASSEMBLY 2-9, and mount the AU-48 board and the TS-80 board.

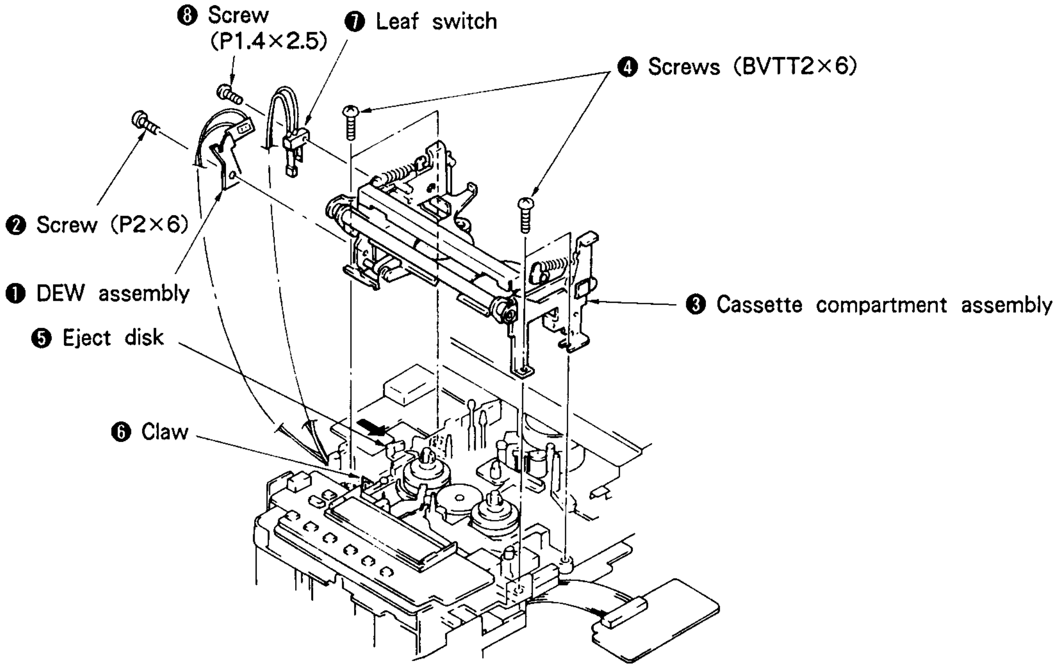

❽ Screw (P1.4×2.5)
❼ Leaf switch
❹ Screws (BVTT2×6)
❷ Screw (P2×6)
❶ DEW assembly
❺ Eject disk
❻ Claw
❸ Cassette compartment assembly

Fig. 8-1a.

Description of installation order of screws ❹

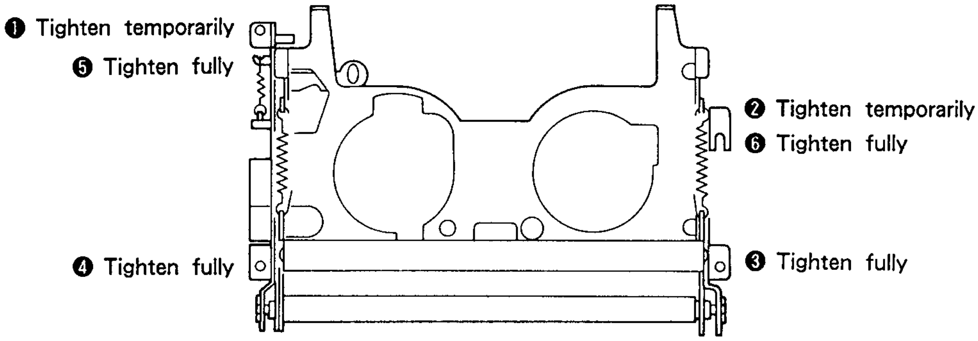

❶ Tighten temporarily
❺ Tighten fully
❹ Tighten fully
❷ Tighten temporarily
❻ Tighten fully
❸ Tighten fully

Fig. 8-1b.

8-1-2. Cassette Compartment Assembly and Operation without Tape Inserted

Note : The set will not operate if there is a strong light source near it.

1. Loading (See Fig. 8-2.)

1) Mount a battely pack and turn ON power supply switch ❶.
2) Fix the two pins of the RECOG SW ❷ in pushed in position by applying adhesive tape.
3) Cover the LED assembly ❸ with a non-transparent cap etc.
4) Turn on the leaf switch ❹.

2. Putting into playback state (See Fig. 8-2.)

1) Mount a battely pack and turn ON power supply switch ❶.
2) Hook the rubber band ❺ between S reel and T reel.
3) Press the playback button, and when the T reel side starts to rotate, push the tension regulator arm assembly ❻ in the direction of the arrow. (At this time, the tension regulator band is released and S reel side rotates.)
4) Press the STOP button to stop.

3. Putting into recording state (See Fig. 8-2.)

1) Mount a battely pack and turn ON power supply switch ❶.
2) Hook the rubber band ❺ between S reel and T reel.
3) Press the recording button, and when the T reel starts to rotate, push the tension regulator arm assembly ❻ in the direetion of the arrow. (At this time, the tension regulator band is released and S reel rotates.)
4) Press the STOP button to stop.

4. Eject (See Fig. 8-2)

1) Press the EJECT button.

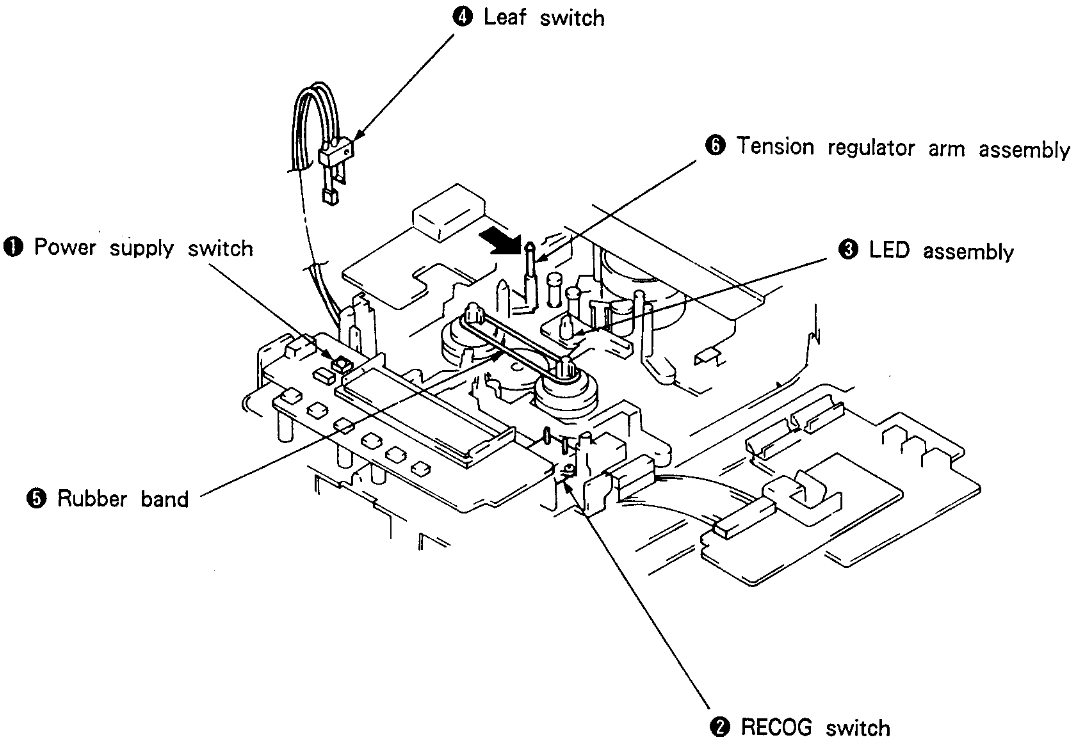


Fig. 8-2.

8-1-3. Handling of Mode Selector

1. Name of individual parts (Exterior)

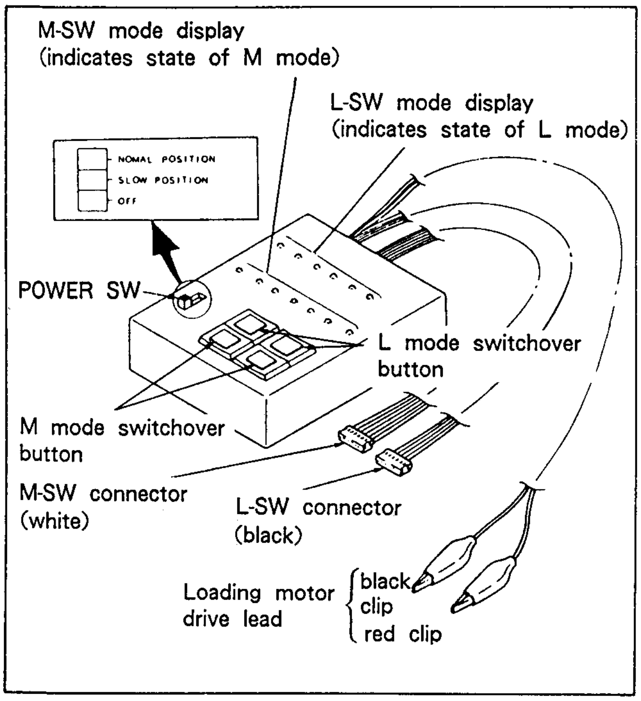

M-SW mode display
(indicates state of M mode)
L-SW mode display
(indicates state of L mode)
NOMAL POSITION
SLOW POSITION
OFF
POWER SW
L mode switchover button
M mode switchover button
M-SW connector (white)
L-SW connector (black)
Loading motor drive lead
black clip
red clip

Fig. 8-3.

2. Connection (See Fig. 8-4.)

1) Insert the M-SW connector (6P connector, 6 harness, white) into the MS-4 board (CN905) on the set.
2) Insert the L-SW connector (6P connector, 4 harness, black) into the LS-9 board (CN904) on the set.
3) Connect the red clip of the loading motor drive lead to the red lead wire side of the loading motor and the black clip to the gray lead wire side. (See Figs. 8-3. and 8-4.)

3. Caution

1) When operating L-SW, be sure to set the M-SW mode to LOADING/UNLOADING.
2) When operating M-SW, be sure to set the L-SW mode to LOADING TOP or LOADING END.

4. Handling

BLANK lights up regardless of L MODE or M MODE when it is in neither mode during select.

1) L-MODE
   - When the right L-MODE switch button is pressed continuously, the display lights up from LOADING TOP → LOADING END, in order in right direction.
   - To go from LOADING END → LOADING TOP, press the left switch button continuously until the desired MODE is reached.
   - In slow position, the L mode operates more slowly than for normal position.
2) M-MODE
   - Set L-SW to LOADING TOP before performing EJECT.
   - Set L-SW to LOADING END to perform FF/REW → RVS or RVS → FF/REW.
   - When the right M-MODE switch button is pressed continuously, the display lights up from EJECT → RVS, in order in right direction.
   - To go from RVS → EJECT, press the left switch button continuously until the desired MODE is reached.

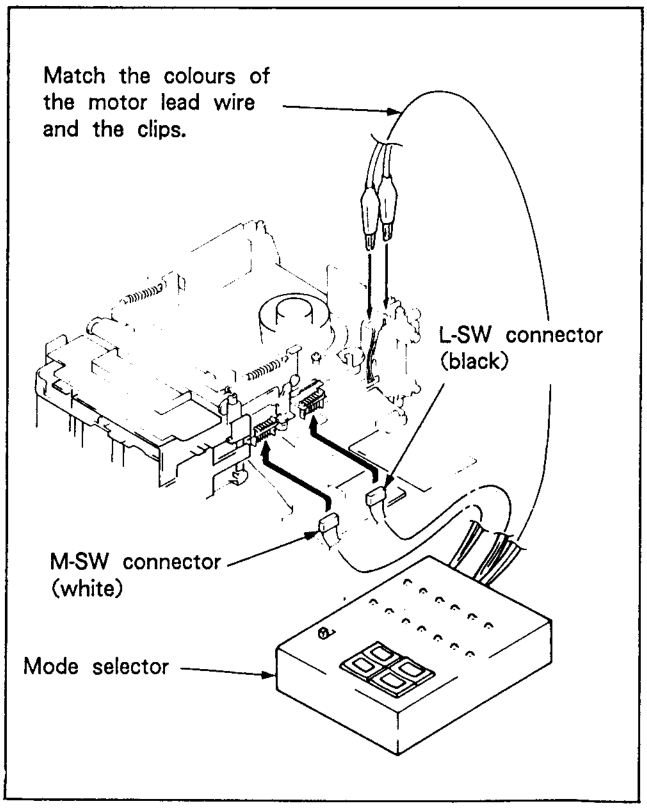

Match the colours of the motor lead wire and the clips.
L-SW connector (black)
M-SW connector (white)
Mode selector

Fig. 8-4.

8-2. PERIODIC CHECK AND MAINTENANCE

Please perform the following periodic checks and maintenence in order to obtain optimum set function and performance, and to keep the mechanism and tape in good condition. Also, perform the maintenance below after repair, regardless of the length of time the set has been used by the user.

8-2-1. Cleaning of Rotary Drum Assembly

1) Press a chamois cloth (Ref. No. J-2) soaked in cleaning fluid (Ref. No. J-1) lightly against the rotary drum assembly, and slowly turn the rotary upper drum assembly counterclockwise by hand to clean.

Note : Do not use the power supply to rotate the motor, and do not rotate the motor clockwise by hand.
Also, there is a danger of damaging the head tip if the chamois cloth is moved vertically relative to the head tip (up/down direction of drum), so please follow the instruction above for cleaning.

8-2-2. Cleaning of Tape Path

1) Place the cassette compartment assembly in EJECT state, and clean the tape path (No.1 to No.11 guides, capstan shaft, pinch roller) with a chamois cloth soaked in cleaning fluid. (See Fig. 8-5.)

8-2-3. Cleaning of Drive System

1) Clean the drive system (timing belt, surface of reel tables) with a chamois cloth soaked in cleaning fluid.

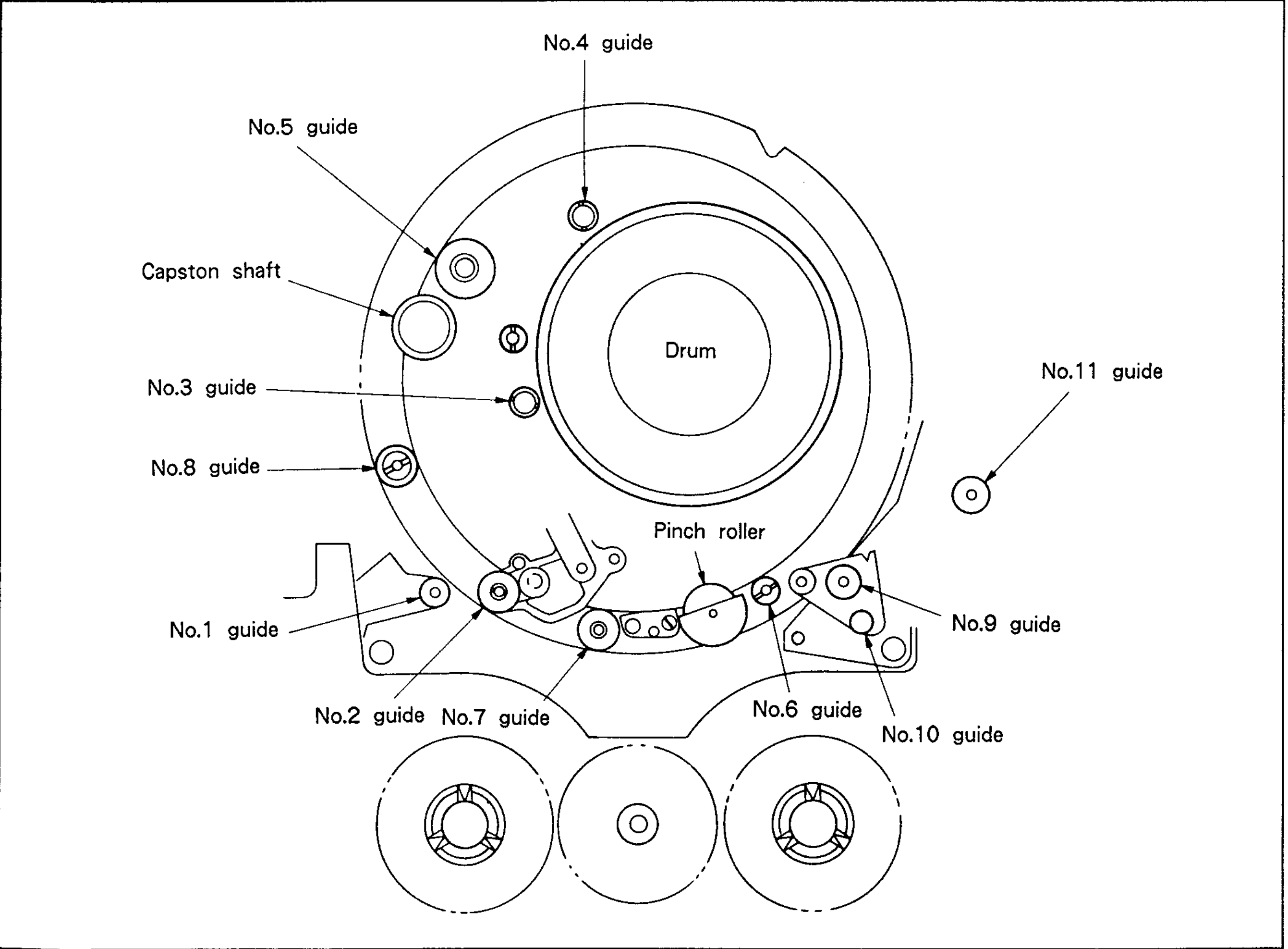

No.4 guide
No.5 guide
Capston shaft
Drum
No.11 guide
No.3 guide
No.8 guide
Pinch roller
No.1 guide
No.9 guide
No.2 guide
No.7 guide
No.6 guide
No.10 guide

Fig. 8-5.

8-2-4. Periodic Check

Perform following according to number of hours of use.

○Cleaning ◎Lublication ★Replacement ☆Check

Location		Hours of Use (H)										Notes
		500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	
Tape Path	Cleaning of tape path surface	○	○	○	○	○	○	○	○	○	○	Be careful of oil
	Cleaning and degaussing of rotary drum assembly	○	○	○	○	○	○	○	○	○	○	Be careful of oil
Drive System	L motor belt	○	○	○	○	○	○	○	★	○	○	3-686-546-01 Replace here, or replace every two years.
	Timing belt	○	○	○	○	○	○	○	○	○	○	3-686-646-01
	Planger solenoid	–	–	–	○	–	–	–	○	–	–	1-454-377-11
	Capstan shaft bearing	–	◎	–	◎	–	◎	–	◎	–	◎	Be careful not to get oil on the tape path surface.
	Loading motor	–	☆	–	☆	–	☆	–	☆	–	☆	A-7040-031-A
	Control motor	–	☆	–	☆	–	☆	–	☆	–	☆	8-835-110-01
Perfor-mance Check	Abnormal noise	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Back tension measurement	–	☆	–	☆	–	☆	–	☆	–	☆	
	Brake system	–	☆	–	☆	–	☆	–	☆	–	☆	
	FWD, RVS torque measurement	–	☆	–	☆	–	☆	–	☆	–	☆	

Note : When performing an overhaul, refer to the items above when replacing parts.

Note : Regarding oil

- Be sure to use designated oil. (There is a danger of trouble occurring if a different viscosity is used.)
  Oil : Parts No.7-661-018-18
  (Mitsubishi Diamond Oil hydrofluid NT-68)
- Be sure to use clean oil when lubricating the shaft bearing, because there is a danger of wear and burning if dirty oil is used.
- One drop of oil means the amount which sticks to a 2 mm diameter rod, as shown in Fig. (See Fig. 8-6.)

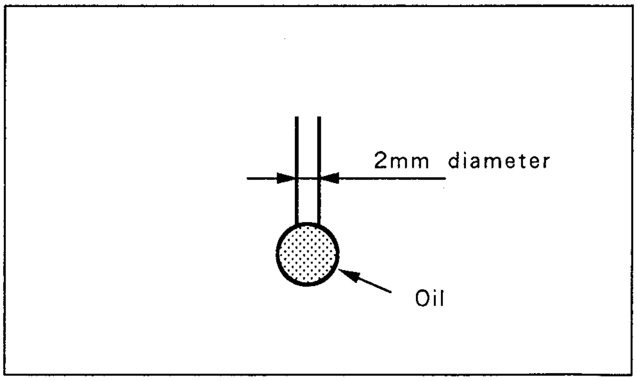


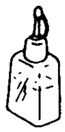
Fig. 8-6.

8-2-5. Service Jig Table

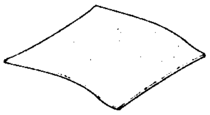
Ref. No.	Name	Part No.	Jig	Use Notes
J-1	Cleaning fluid	Y-2031-001-1		
J-2	Chamois cloth	2-034-697-00		
J-3	Head degausser	Commercially sold		
J-4	Small adjustment mirror, Spare mirror	J-6080-029-A J-6080-030-1	SL-5052	Tape path
J-5	Alignment tape (WR5-1C)	8-967-995-06		Tape path
J-6	Dial tension gauge	J-6080-827-A		Various torque measurements
J-7	Tension measurement reel	J-6080-831-A		with ϕ 30 tape
J-8	Tension measurement reel	J-6080-832-A		with ϕ 16 string
J-9	No.10 gear phase jig	J-6080-823-A	GD-2047	
J-10	Rotary drum jig	(packed with the rotary upper drum for repair)		
J-11	No.6 guide lock screwdriver	J-6080-826-A		
J-12	FWD, RVS winding torque cassette	J-6080-824-A	GD-2086	
J-13	Mode selector	J-6080-825-A		for all models
J-14	Track shift jig	J-6080-891-A		Tape path
J-15	RF/SWP connector connecting cord	J-6080-843-3		Tape path
J-16	CTL connector connecting cord	J-6080-859-A		Tape path

Other equipment :
- Oscilloscope
- Analog tester (20k Ω)

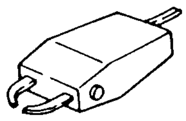
J-1



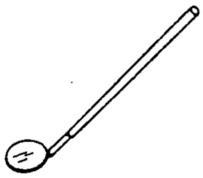
J-2



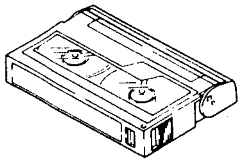
J-3



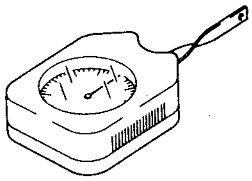
J-4



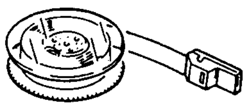
J-5



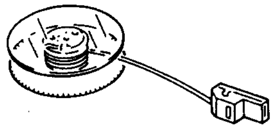
J-6



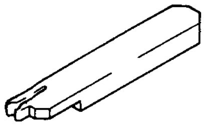
J-7



J-8

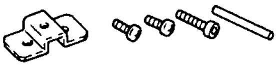


J-9

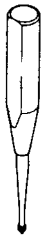


J-10

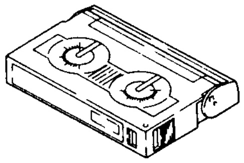
(Packed with the rotary upper drum for repair)



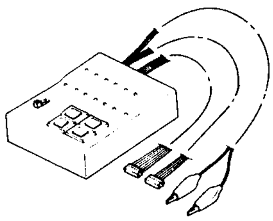
J-11



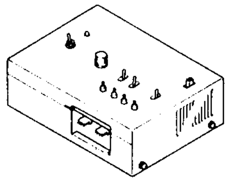
J-12



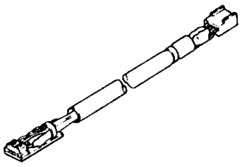
J-13



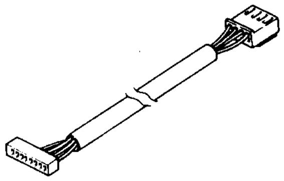
J-14



J-15



J-16



8-3. MECHANICAL CHECK, ADJUSTMENT AND REPLACEMENT

Note :
- Use the mode selector (Ref. No. J-13) for this mechanical check, adjustment and replacement.
- The mode inside the ☐ is the mode set by pressing the mode selector button.

8-3-1. S Reel Table Assembly

1. Removal (See Fig. 8-7.)

1) Remove the cassette compartment assembly according to Section 2. DISASSEMBLY 2-12.
2) Set to FF/REW mode.
3) Remove screw ❶ and remove reel table stopper ❷.
4) Remove the REV brake assembly ❸.
5) Remove the S reel table assembly ❹.
   Note : Be sure to hold the upper reel claw section when removing. (See Fig. 8-7.(Note))

2. Mounting (See Fig. 8-7.)

1) Put a half drop of oil on the upper point of shaft ❺.
2) Move the S main brake assembly ❻ in the direction of arrow.
3) Mount the S reel table assembly ❹, being careful not to hit the tension regulator band assembly ❼.
4) Mount the REV brake assembly ❸.
5) Mount the reel table stopper ❷ and tighten with screw ❶.
6) Set to LOADING/UNLOADING mode.
7) Mount the cassette compartment assembly according to 8-1-1.
8) Perform 8-3-21. FWD Back Tension Adjustment.

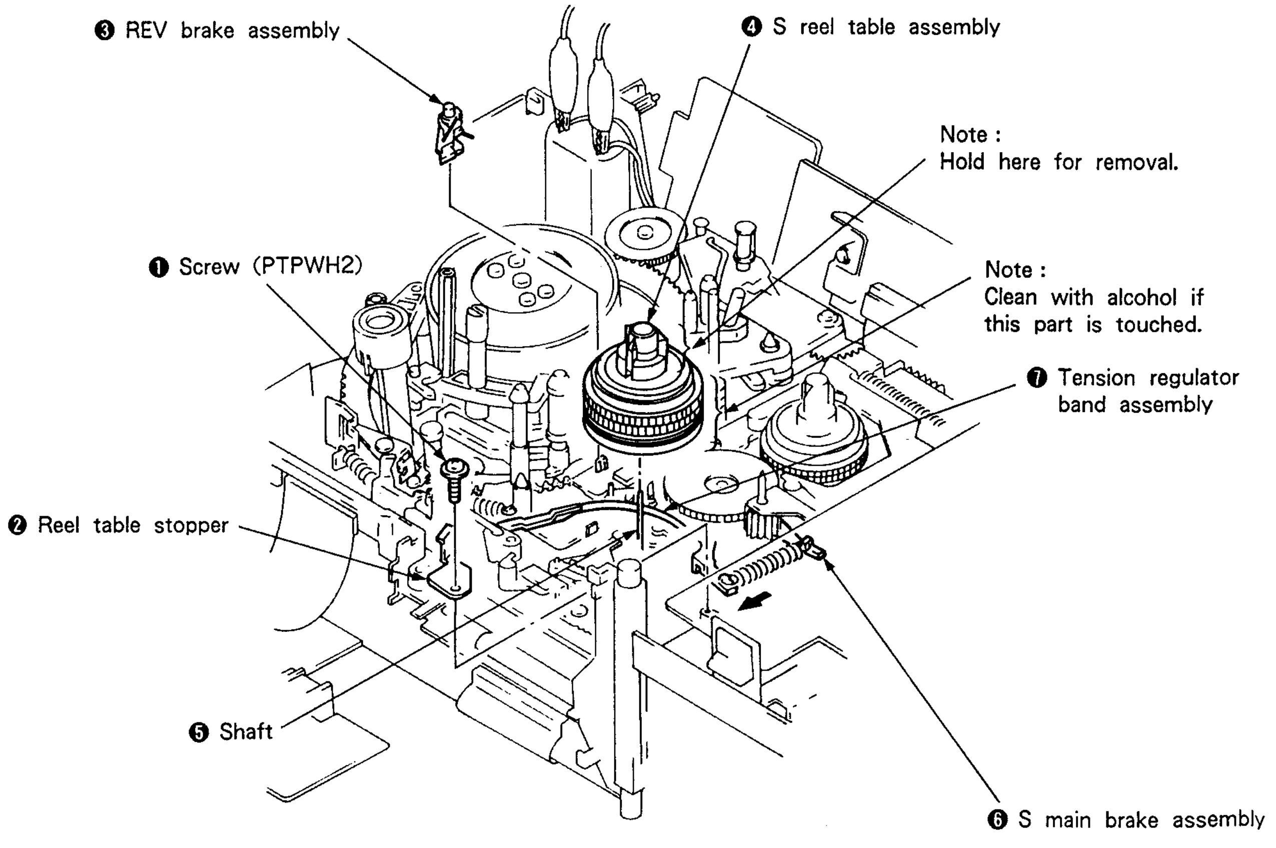

❸ REV brake assembly
❹ S reel table assembly
Note :
Hold here for removal.
❶ Screw (PTPWH2)
Note :
Clean with alcohol if this part is touched.
❼ Tension regulator band assembly
❷ Reel table stopper
❺ Shaft
❻ S main brake assembly

Fig. 8-7.

8-3-2. T Reel Table Assembly

1. Removal (See Fig. 8-8.)

1) Remove the cassette compartment assembly according to Section 2. DISASSEMBLY 2-12.
2) Set to UNLOADING WAIT mode.
3) Hook the spring ❷ on the T.S brake assembly ❶ to the claw of lock slider.
4) Remove the stopper washer ❸ and remove the T.S brake assembly ❶.
5) Set to EJECT mode.
6) Move drive gear B assembly ❹ in the direction of the arrow.
7) Remove T reel table assembly ❺.

Note : Be sure to hold the upper reel claw section when removing. (See Fig. 8-7. (Note))

2. Mounting (See Fig. 8-8.)

1) Put a half drop of oil on the upper point of shaft ❻.
2) Move the drive gear B assembly ❹ in the direction of the arrow. (Confirm EJECT mode.)
3) Mount the T reel table assembly ❺.
4) Mount the T.S brake assembly ❶ and fix the stopper washer ❸.
5) Hook the spring ❷ on the T.S brake assembly ❶ claw.
6) Set to LOADING TOP , LOADING／UNLOADING mode.
7) Mount the cassette compartment assembly according to 8-1-1.

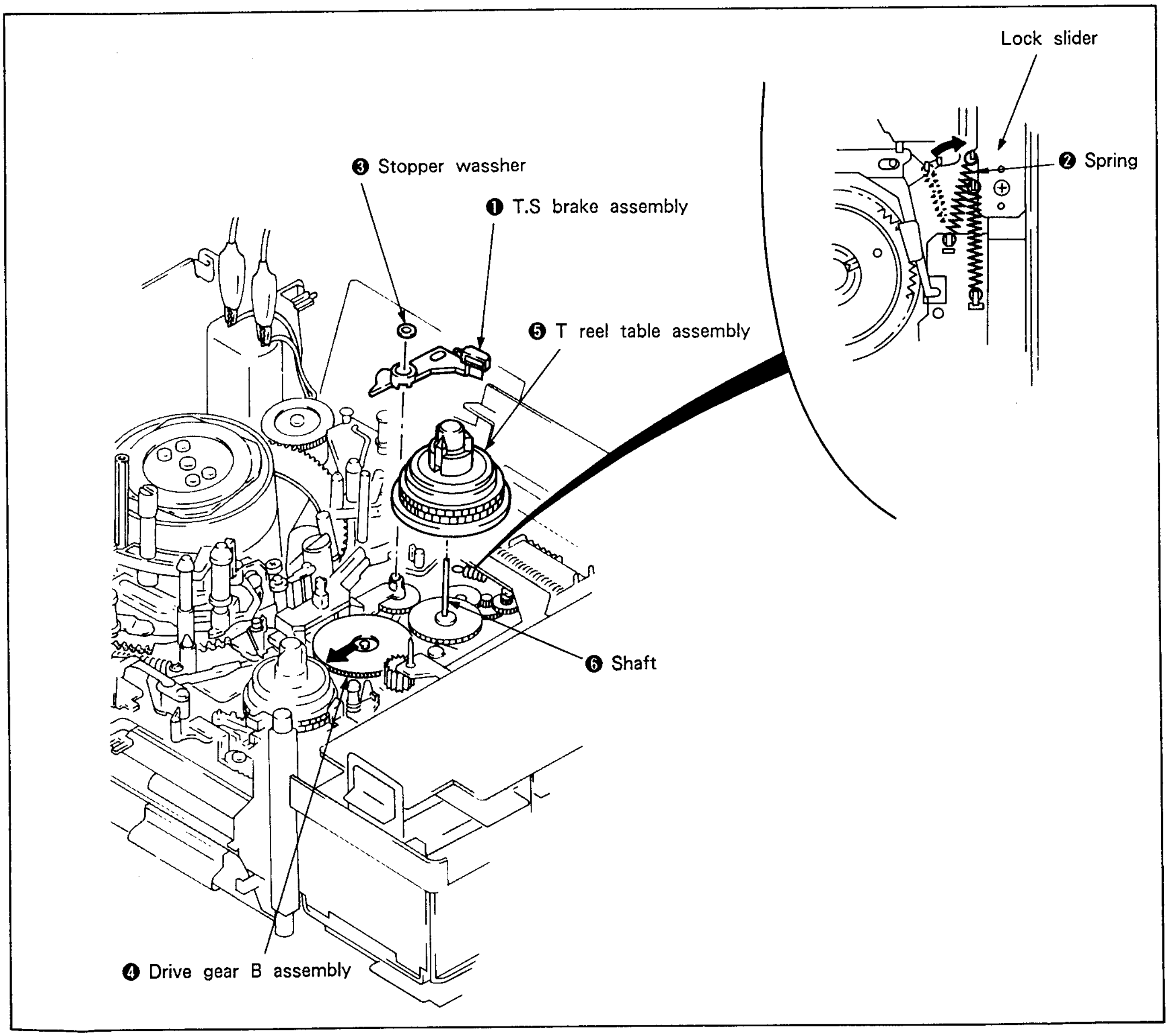

Lock slider
❷ Spring
❸ Stopper wassher
❶ T.S brake assembly
❺ T reel table assembly
❻ Shaft
❹ Drive gear B assembly

Fig. 8-8.

8-3-3. Pinch Press Arm Assembly

1. Removal (See Fig. 8-9.)

1) Hook the spring ❶ on the pinch press arm assembly ❷.
2) Remove the stopper washer ❸ and remove the pinch press arm assembly ❷.

2. Mounting (See Fig. 8-9.)

1) Put a half drop of oil on the shaft ❹.
2) Mount the pinch press arm assembly ❷ and fix the stopper washer ❸.
3) Hook the spring ❶ on the spring hook assembly ❺.

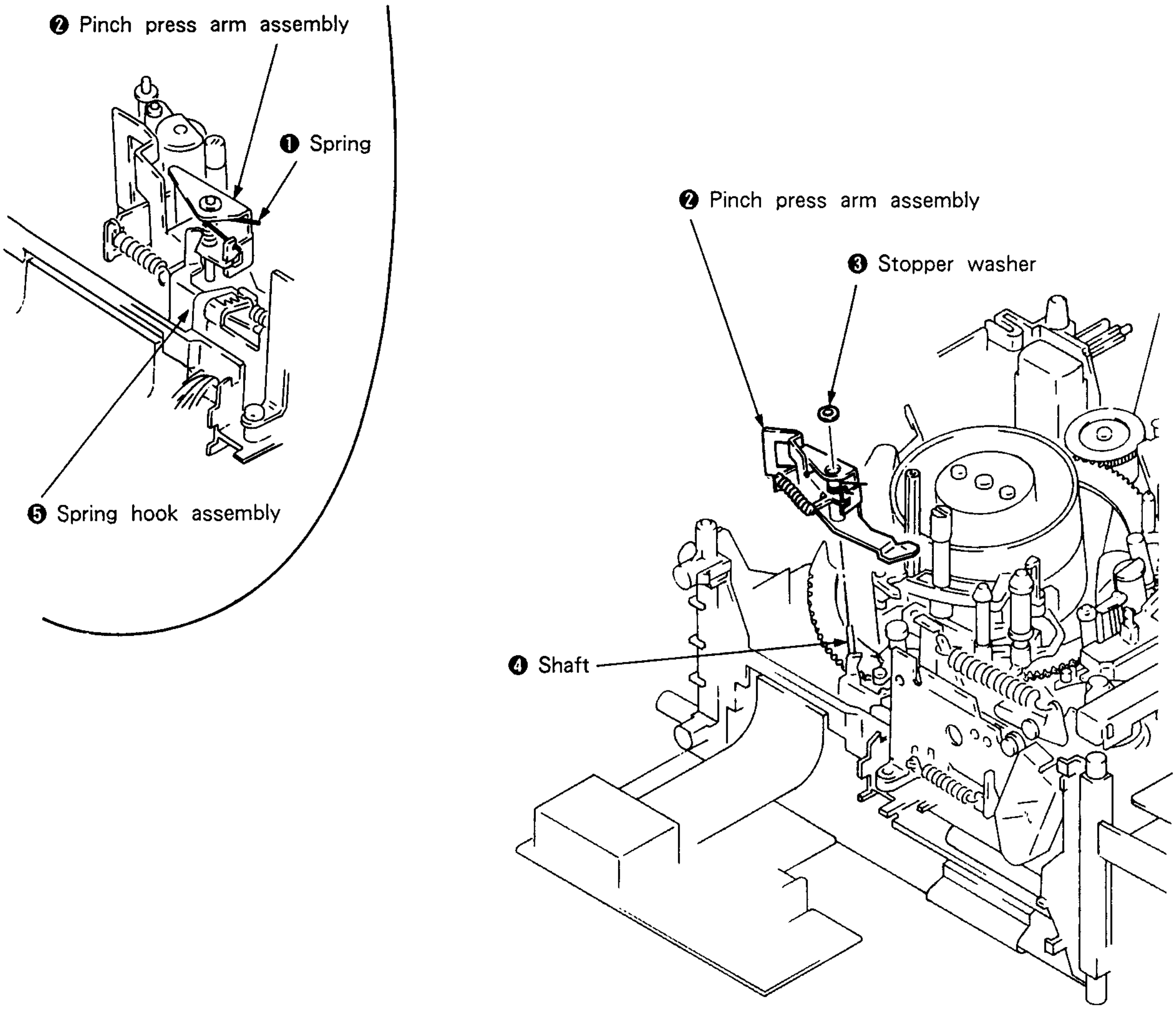

❷ Pinch press arm assembly
❶ Spring
❺ Spring hook assembly
❷ Pinch press arm assembly
❸ Stopper washer
❹ Shaft

Fig. 8-9.

8-3-4. Tension Regulator Arm Assembly

1. Removal (See Fig. 8-10.)

1) Remove the cassette compartment assembly according to Section 2. DISASSEMBLY 2-12.
2) Change the spring position as described in 8-3-3. 1. Removal, 1). (See Fig. 8-9.)
3) Remove spring ❶. (Note its hooking position.)
4) Remove screw ❷ and remove the spring hook assembly ❸.
5) Set to FF/REW mode.
6) Remove the tension regulator band assembly claw ❹.
7) Remove the tension regulator arm assembly ❺.

2. Mounting (See Fig. 8-10.)

1) Put a half drop of oil on the shaft ❻.
2) Mount the tension regulator arm assembly ❺, inserting the tension regulator load arm assembly pin ❼ in the tension regulator arm assembly ❺ cam groove (on the back).
3) Mount the tension regulator band assembly claw ❹. (Do not touch the band or change its shape.)
4) Set to LOADING/UNLOADING mode.
5) Mount the spring hook assembly ❸ and tighten with screw ❷.
6) Replace spring ❶ in its original position and lock the screw.
7) Hook the spring according to 8-3-3. 2. Mounting, 3).
8) Mount the cassette compartment assembly according to 8-1-1.

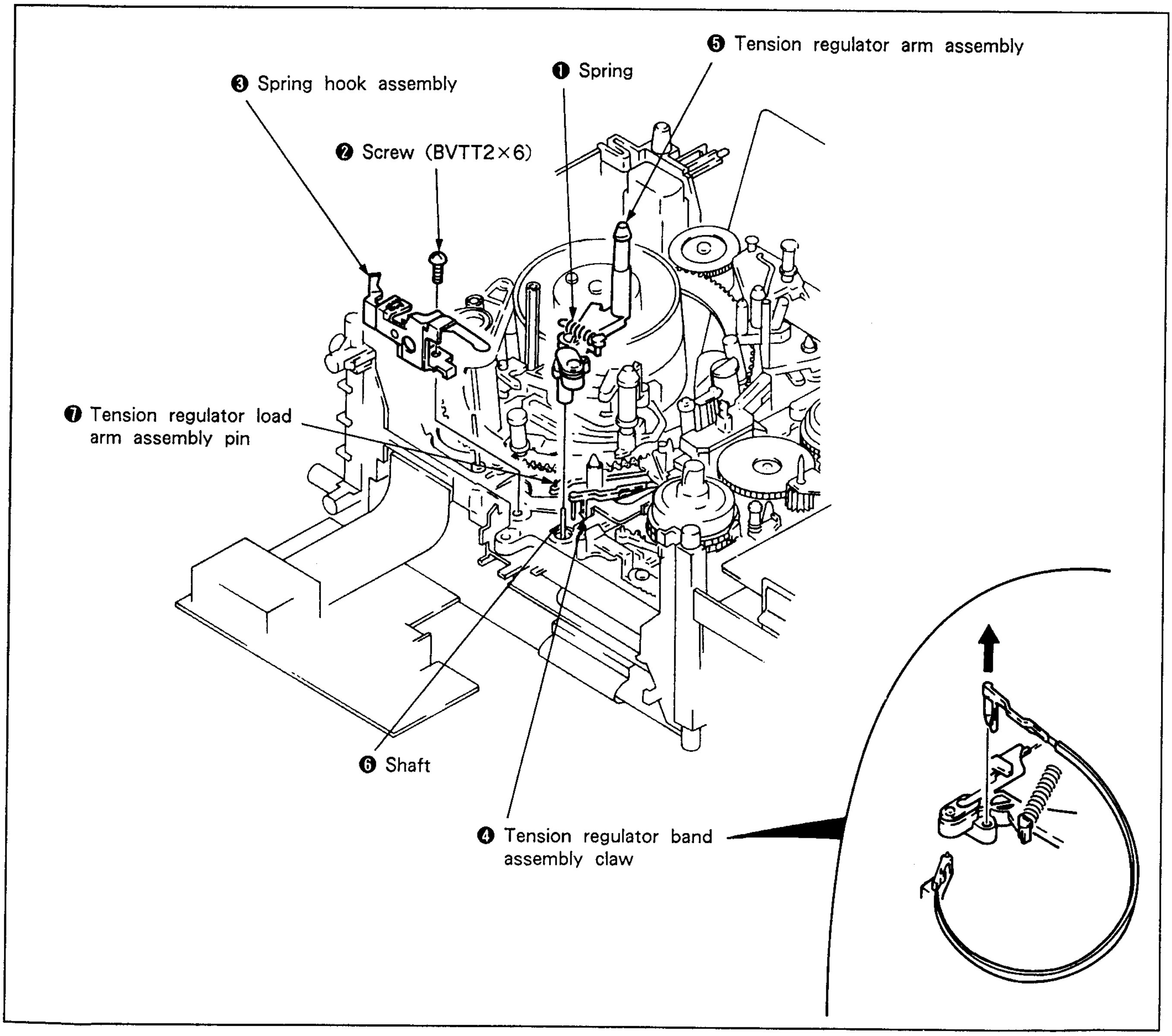

❺ Tension regulator arm assembly
❸ Spring hook assembly
❶ Spring
❷ Screw (BVTT2×6)
❼ Tension regulator load arm assembly pin
❻ Shaft
❹ Tension regulator band assembly claw

Fig. 8-10.

8-3-5. Tension Regulator Band Assembly

1. Removal (See Fig. 8-11.)

1) Remove the S reel table assembly according to 8-3-1. 1. Removal. (See Fig. 8-7.)
2) Remove the band arm claw ❶.
3) Remove claw ❷ and remove the tension regulator band assembly ❸.

2. Mounting (See Fig. 8-11.)

1) Mount the tension regulator band assembly ❸. (Do not touch the band or change its shape.)
2) Fit on the band arm claw ❶.
3) Mount the S reel table assembly according to 8-3-1. 2. Mounting.(See Fig. 8-7.)
4) Perform 8-3-21. FWD Back Tension Adjustment.

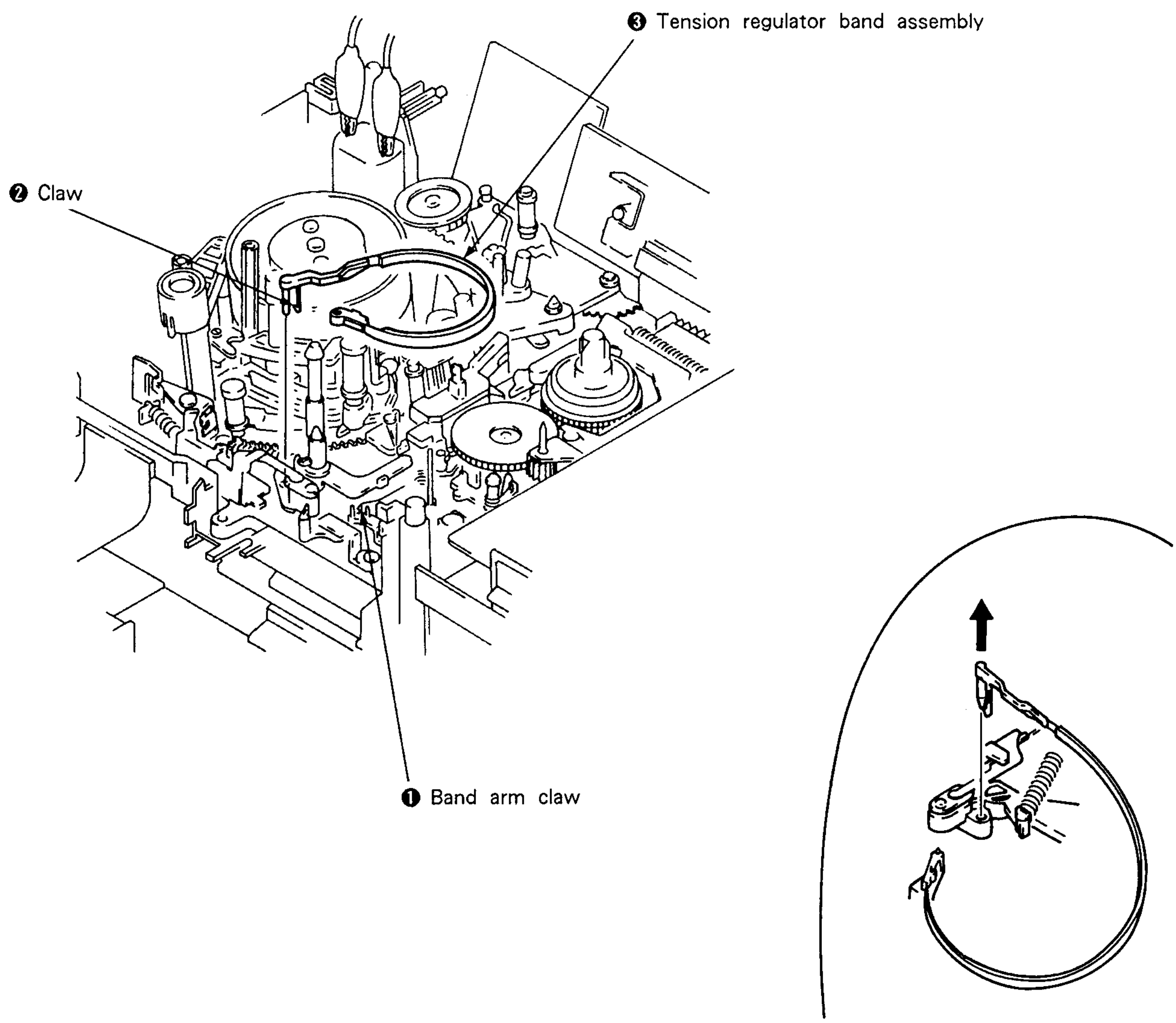

❸ Tension regulator band assembly
❷ Claw
❶ Band arm claw

Fig. 8-11.

8-3-6. Loading Motor Assembly

1. Removal (See Fig. 8-12.)

1) Open the SS-83 board according to Section 2. DISASSEMBLY 2-14.
2) Remove L motor belt ❶.
3) Remove the CN302 connector (white) 2P ❷ from the RS-18 board.
4) Remove the two screws ❸ and remove the loading motor assembly ❹.

2. Mounting (See Fig. 8-12.)

1) Mount the loading motor assembly ❹ and tighten with the two screws ❸.
2) Connect CN302 connector (white) 2P ❷ to RS-18 board.
3) Mount L motor belt ❶.
4) Mount each board in opposite procedure of Section 2. DISASSEMBLY 2-14.

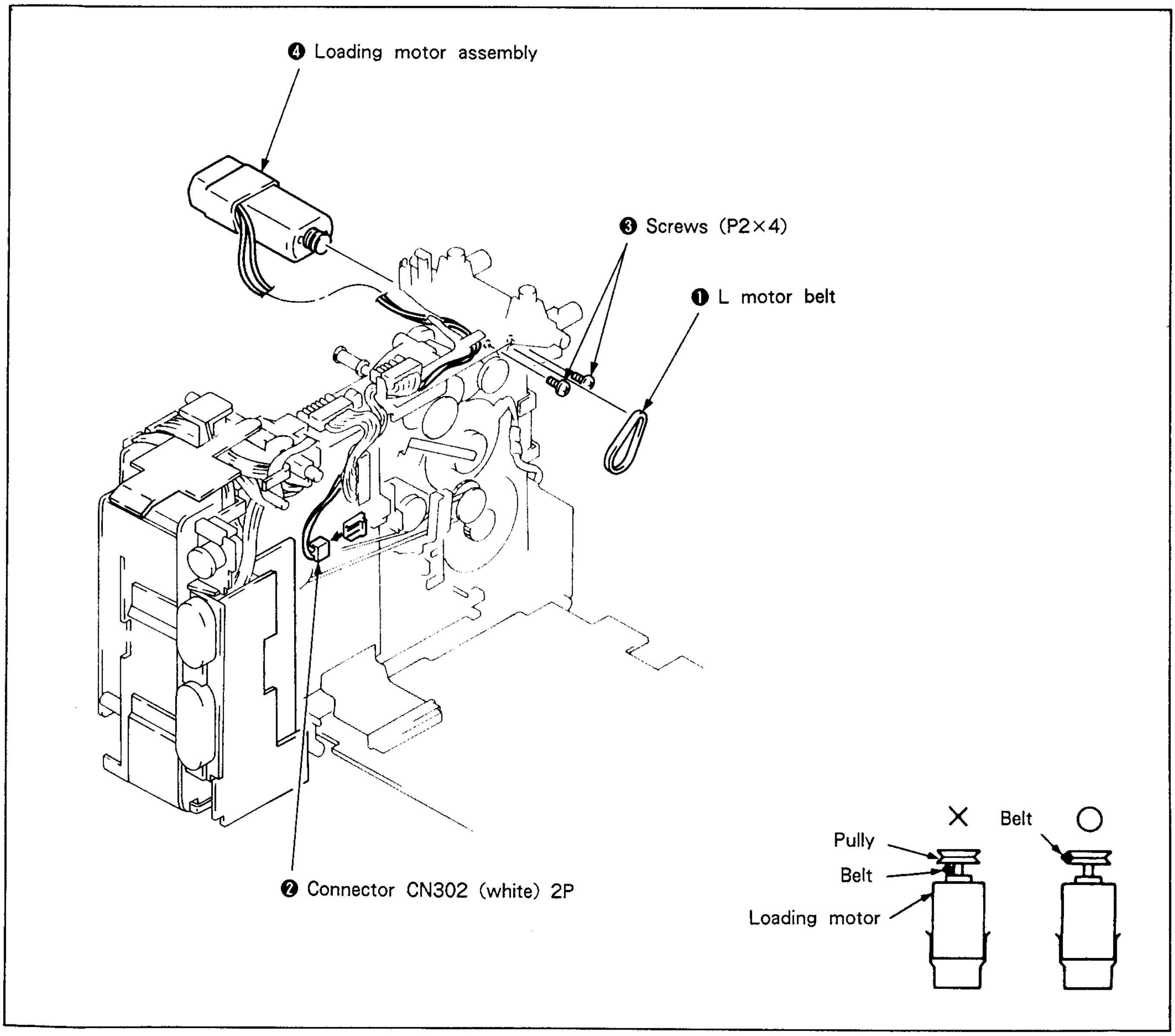
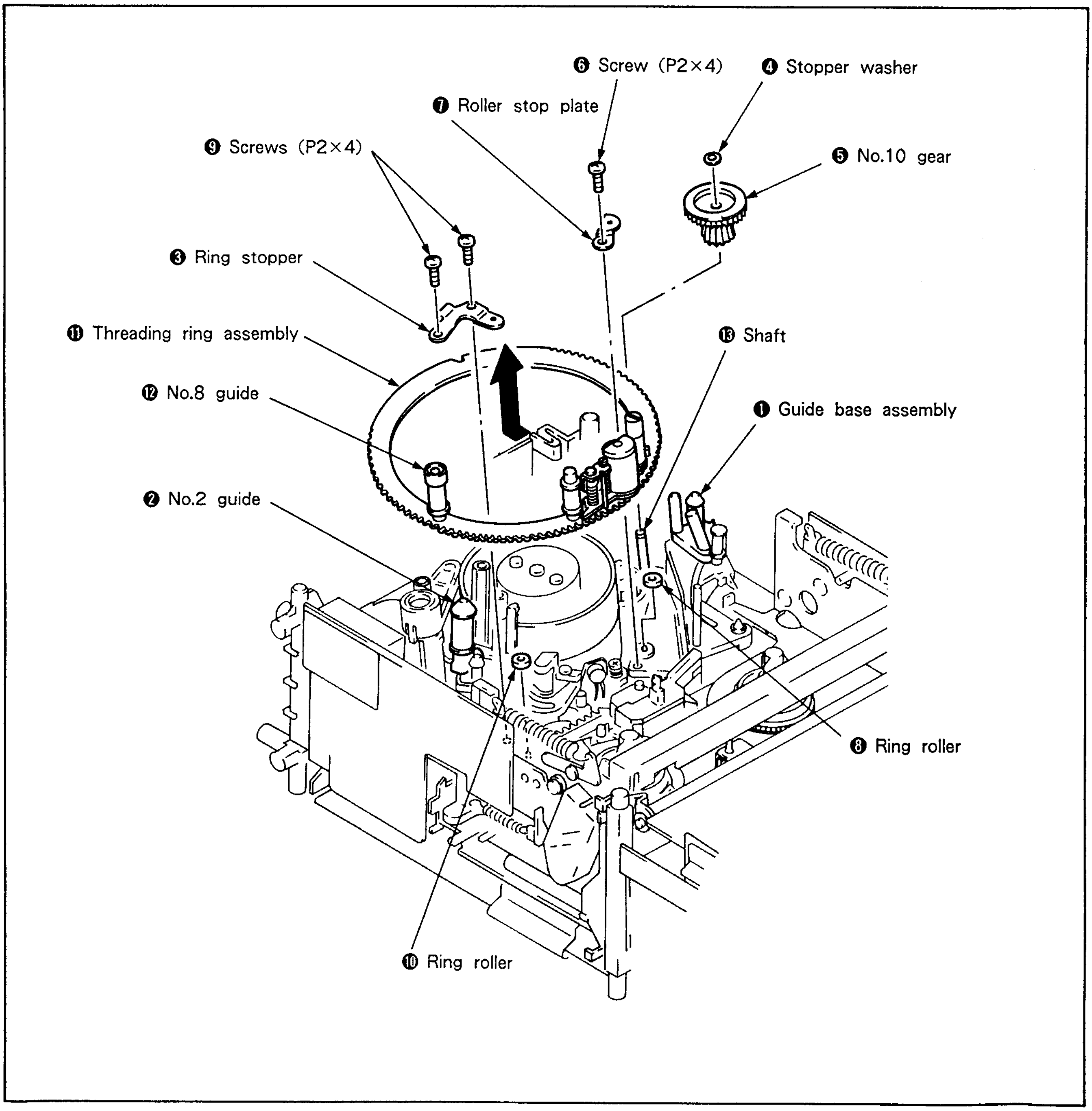

❹ Loading motor assembly
❸ Screws (P2×4)
❶ L motor belt
❷ Connector CN302 (white) 2P
×
Belt
○
Pully
Belt
Loading motor

Fig. 8-12.

8-3-7. Threading Ring Assembly

1. Removal (See Fig. 8-13.)

1) Operate the mode selector, and move the guide base assembly ❶ until just before it locks, and the No.2 guide assembly ❷ until just before it locks where the ring stopper ❸ screw is visible. (Do not move threading ring assembly ⓫.)
2) Remove the stopper washer ❹ and remove No.10 gear ❺.
3) Remove screw ❻, and remove the roller stop plate ❼ and ring roller ❽.
4) Remove the two screws ❾, and remove the ring stopper ❸ and ring roller ❿.
5) Remove the threading ring assembly ⓫ in the direction of arrow.



❻ Screw (P2×4)
❹ Stopper washer
❼ Roller stop plate
❾ Screws (P2×4)
❺ No.10 gear
❸ Ring stopper
⓫ Threading ring assembly
⓭ Shaft
⓬ No.8 guide
❶ Guide base assembly
❷ No.2 guide
❽ Ring roller
❿ Ring roller

Fig. 8-13.

2. Mounting (See Fig. 8-13.)

1) Mount the threading ring assembly ⓫ so that it becomes in the unthreaded state (pinch roller arm assembly is on the front panel side.) (Confirm that it is in the state in Removal, 1).)
2) Mount the ring roller ⓾ and ring stopper ❸ and tighten with the two screws ❾. (No.8 guide ⓬ should be closer to the front panel than the ring stopper ❸.)
3) Mount the ring roller ❽ and roller stop plate ❼ and tighten with screw ❻. (Confirm that the loading ring assembly matches the three ring rollers.)
4) Put a half drop of oil on the shaft ⓭.
5) Check that the protrusions on the drive changer assembly are in the indentations of the L-SW assembly and insert the No.10 gear phase jig (Ref. No. J-9). (See Fig. 8-14.)
6) Mount No.10 gear ❺ and fix stopper washer ❹ while pushing the No.8 guide ⓬ against the ring stopper ❸.
7) Pull out the No.10 gear phase jig.
8) Set to LOADING TOP mode.

Note : Be sure to perform 8-4. TAPE PATH ADJUSTMENT after mounting.

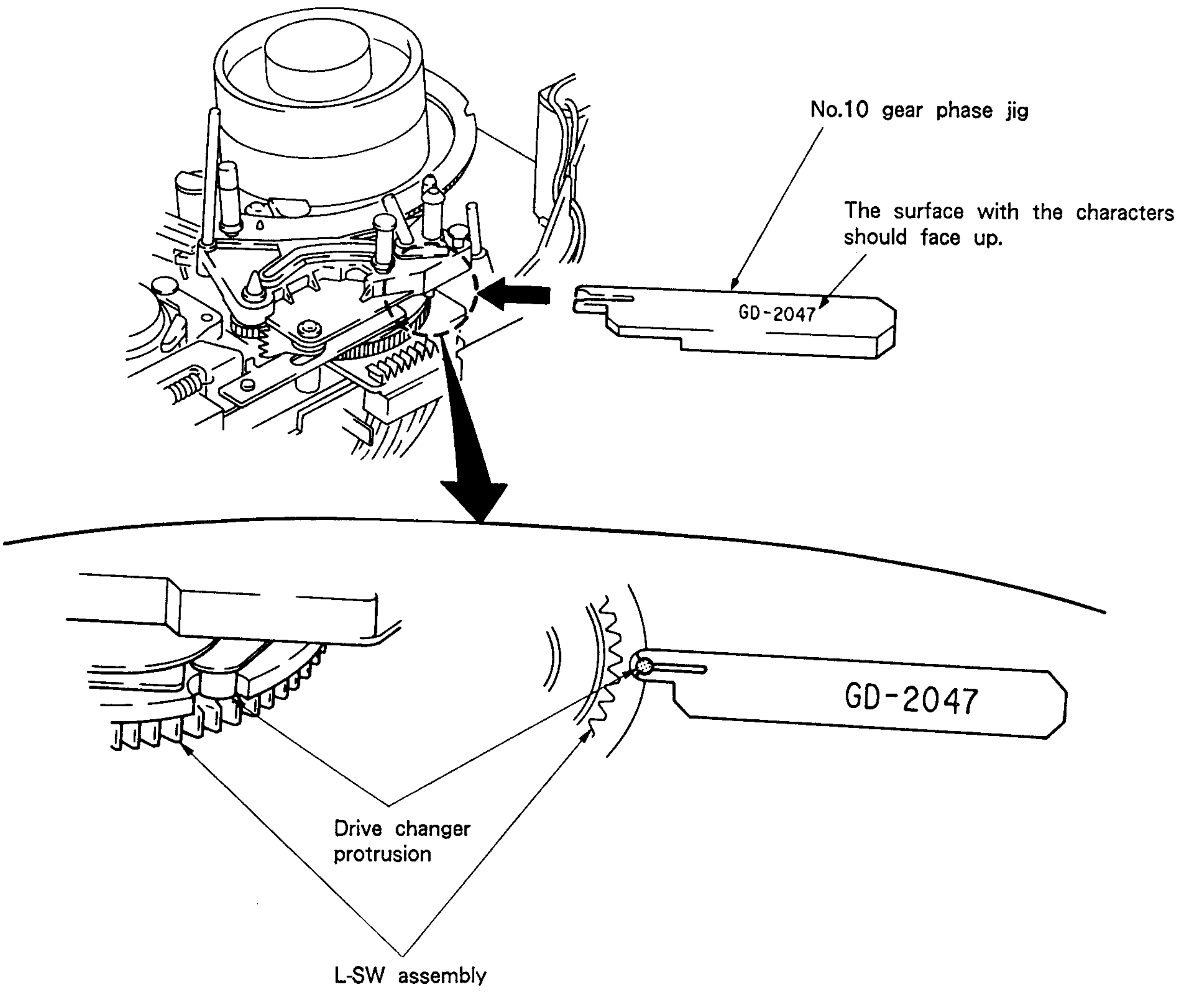

No.10 gear phase jig
The surface with the characters should face up.
GD-2047
GD-2047
Drive changer protrusion
L-SW assembly

Fig. 8-14.

8-3-8. Pinch Roller Assembly

1. Removal

1) Remove the threading ring assembly according to 8-3-7. 1. Removal.(See Fig. 8-13.)
2) Remove stopper washer ❶. (See Fig. 8-15.)
3) Change the position of the spring ❸ on No. 7 guide assembly ❷. (See Fig. 8-16.)
4) Turn pinch roller arm assembly ❹ in the direction of arrow. (See Fig. 8-17.)
5) Remove pinch roller arm assembly ❹ in the direction of arrow. (See Fig. 8-18.)
6) Remove spring ❸. (See Figs. 8-18 and 8-19.)

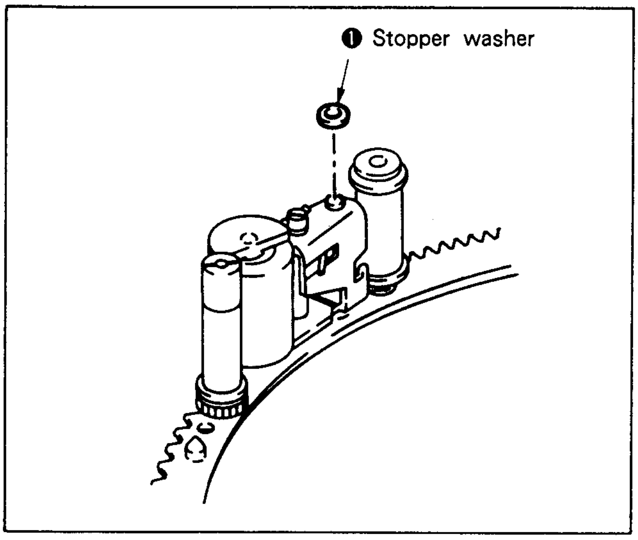

❶ Stopper washer

Fig. 8-15.

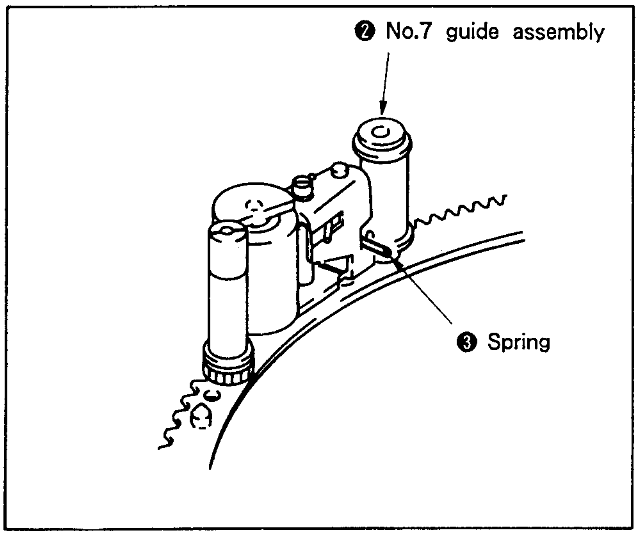

❷ No.7 guide assembly
❸ Spring

Fig. 8-16.

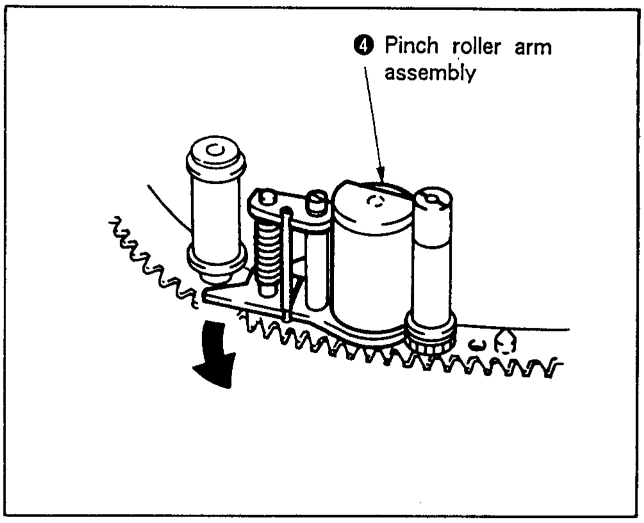

❹ Pinch roller arm assembly

Fig. 8-17.

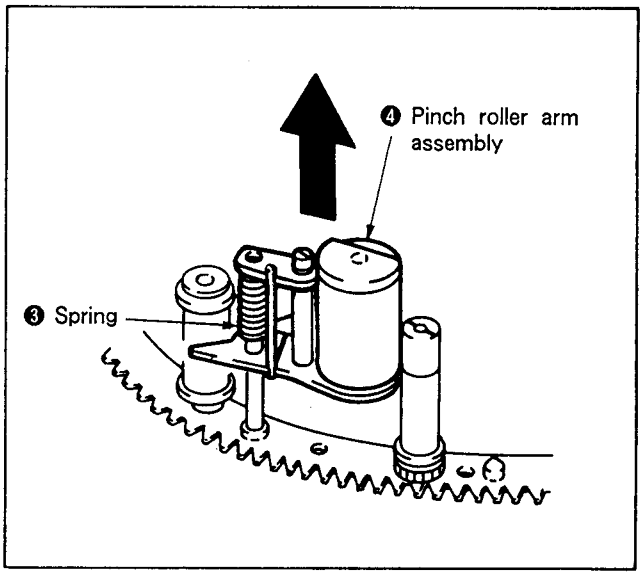

❹ Pinch roller arm assembly
❸ Spring

Fig. 8-18.

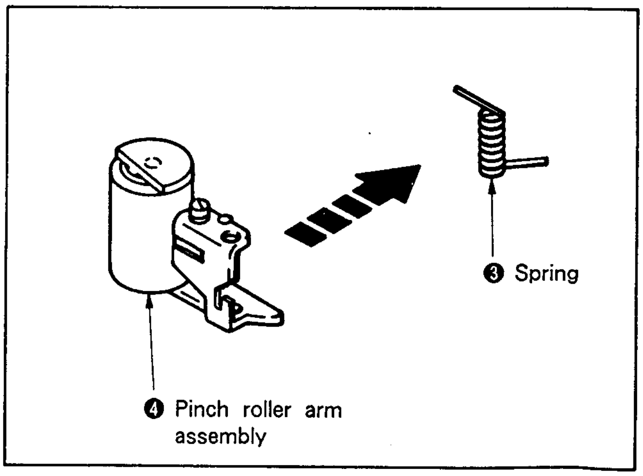

❸ Spring
❹ Pinch roller arm assembly

Fig. 8-19.

2. Mounting

1) Hook spring ❸. (See Fig. 8-22.)
2) Insert the clip ❺ or another thin rod inside the pinch roller arm assembly hole ❻. (See Figs. 8-21. and 8-22.)
3) Put the end of the clip ❺ to the threading ring assembly shaft ❼ and mount the pinch roller arm assembly ❹. (See Figs. 8-23. and 8-24.)
4) Hook the spring on No.7 guide assembly ❷. (See Fig. 8-25.)
5) Fix the stopper washer ❶. (See Fig. 8-26.)
6) Mount the threading ring assembly according to 8-3-7. 2. Mounting. (See Fig. 8-13.)

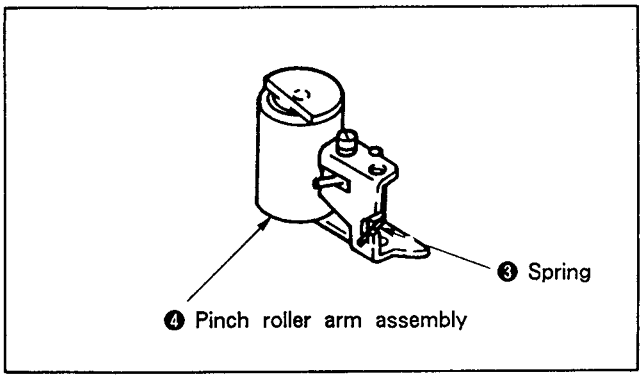

❸ Spring
❹ Pinch roller arm assembly

Fig. 8-20.

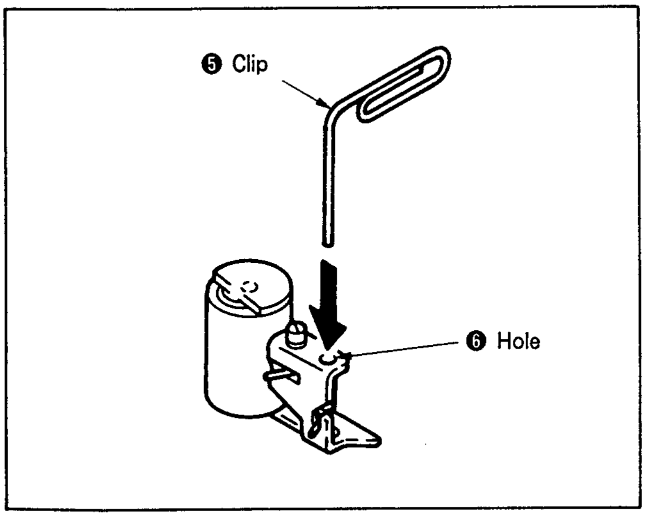

❺ Clip
❻ Hole

Fig. 8-21.

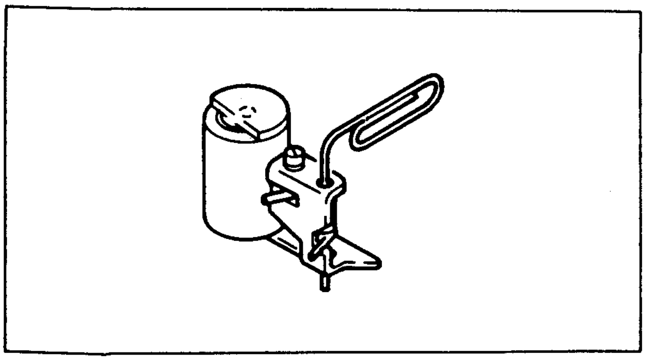


Fig. 8-22.

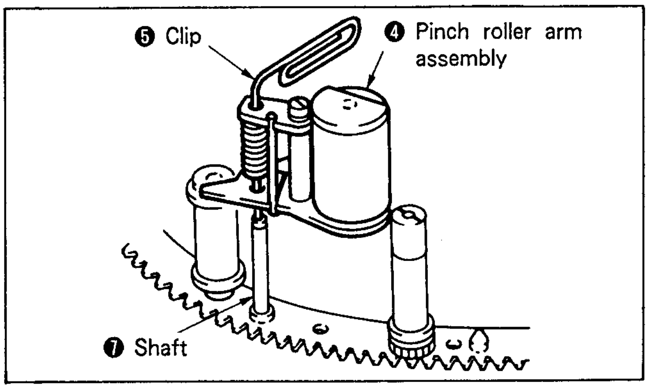

❺ Clip
❹ Pinch roller arm assembly
❼ Shaft

Fig. 8-23.

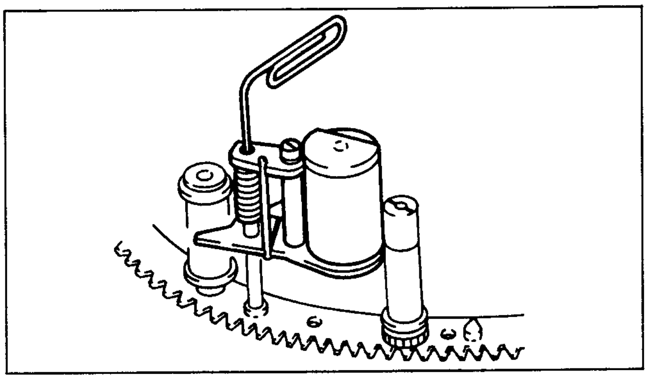


Fig. 8-24.

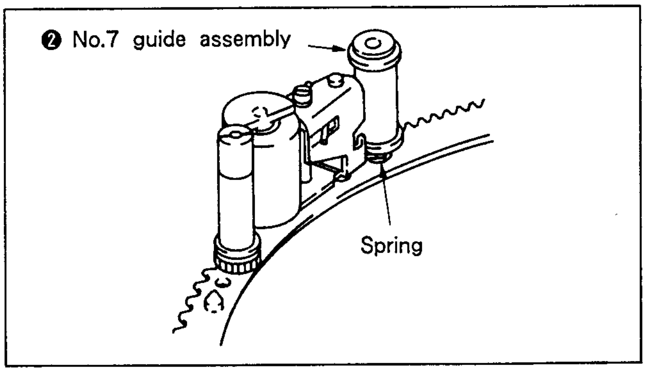

❷ No.7 guide assembly
Spring

Fig. 8-25.

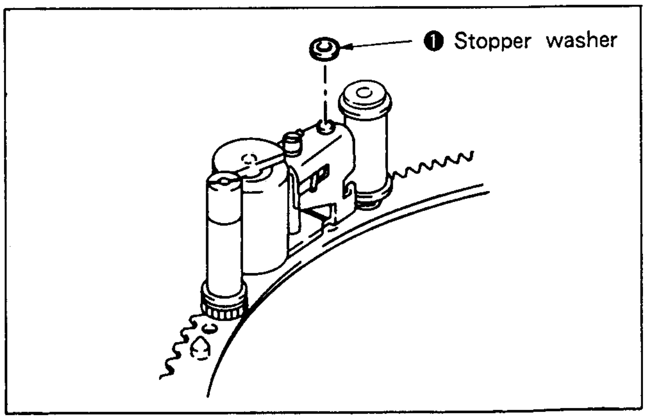

❶ Stopper washer

Fig. 8-26.

8-3-9. Slant Guide Chassis Assembly

1. Removal (See Fig. 8-27.)

1) Set to EJECT mode and life up the cassette compartment assembly.
2) Remove the threading ring assembly according to 8-3-7. 1. Removal. (See Fig. 8-13.)
3) Remove screw ❶ and E ring ❷.
4) Remove the slant guide chassis assembly ❸.

2. Mounting

1) Operate the mode selector, and line up the right edge of the L slider assembly and the right edge of the lock slider assembly. (See Fig. 8-28.)
2) Set the slant guide chassis assembly ❸ guide base assembly in unthreaded state (guide base assembly is on front panel side) and mount. (See Fig. 8-29.)
3) Insert the E ring ❷ and tighten with screw ❶. (See Fig. 8-27.)
4) Put in the state in 8-3-7. 1. Removal, 1).
5) Mount the threading ring assembly according to 8-3-7. 2. Mounting. (See Fig. 8-13.)
6) Lower cassette compartment assembly.

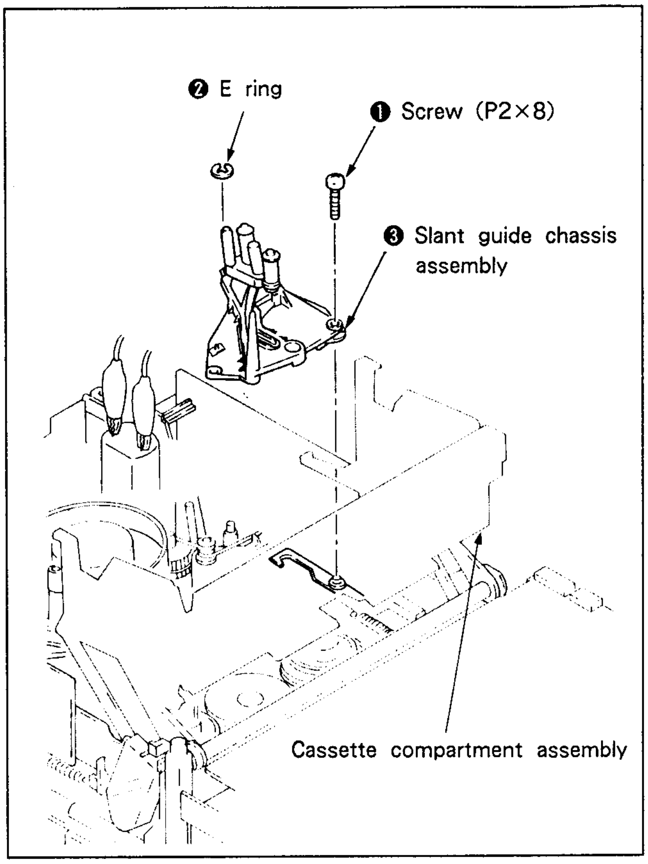

❷ E ring
❶ Screw (P2×8)
❸ Slant guide chassis assembly
Cassette compartment assembly

Fig. 8-27.

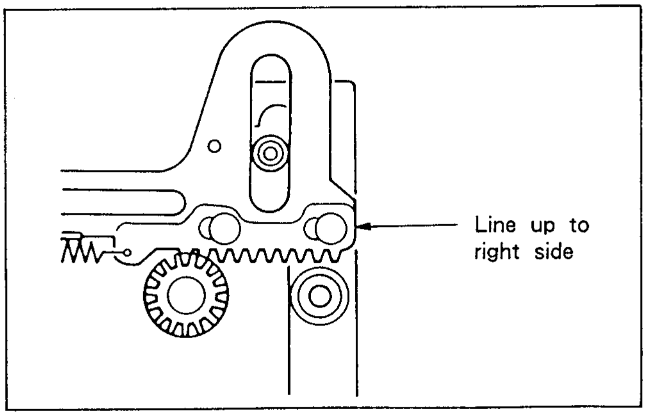

Line up to right side

Fig. 8-28.

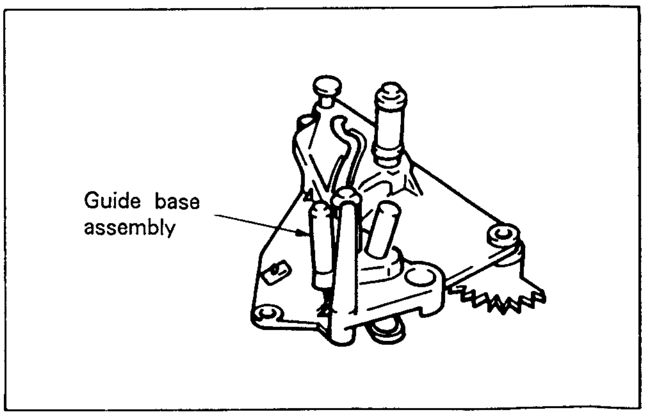

Guide base assembly

Fig. 8-29.

8-3-10. Entrance Guide (P) Assembly (No. 2 Guide Assembly)

1. Removal (See Fig. 8-30.)

1) Release the tape stopper ❶ clow and remove.
2) Turn the rotary upper drum counterclockwise, so that the head tip section dose not touch the entrance guide (P) assembly ❽.
3) Remove the drum guard screw ❷.
4) Remove the screw ❸.
5) Remove No.3 guide nut ❹, and remove guide flange ❺, guide ❻ and compression spring ❼.
6) Remove the entrance guide (P) assembly ❽.

2. Mounting (See Fig. 8-30.)

1) Confirm that LOADING TOP mode is set.
2) Engage the lower side of the entrance guide (P) assembly and L slider assembly with their flat portions Ⓐ and Ⓑ as shown.
3) Mount the compression spring ❼, guide ❻ and guide flange ❺ in that order and then temporarily tighten the guide nut ❹.
4) Tighten the screw ❸.
5) Tighten the drum guard screw ❷.
6) Fix the tape stopper ❶.
7) Perform 8-3-21. FWD Back Tension Adjustment.

Note : Be sure to perform 8-4. TAPE PATH ADJUSTMENT after mounting.

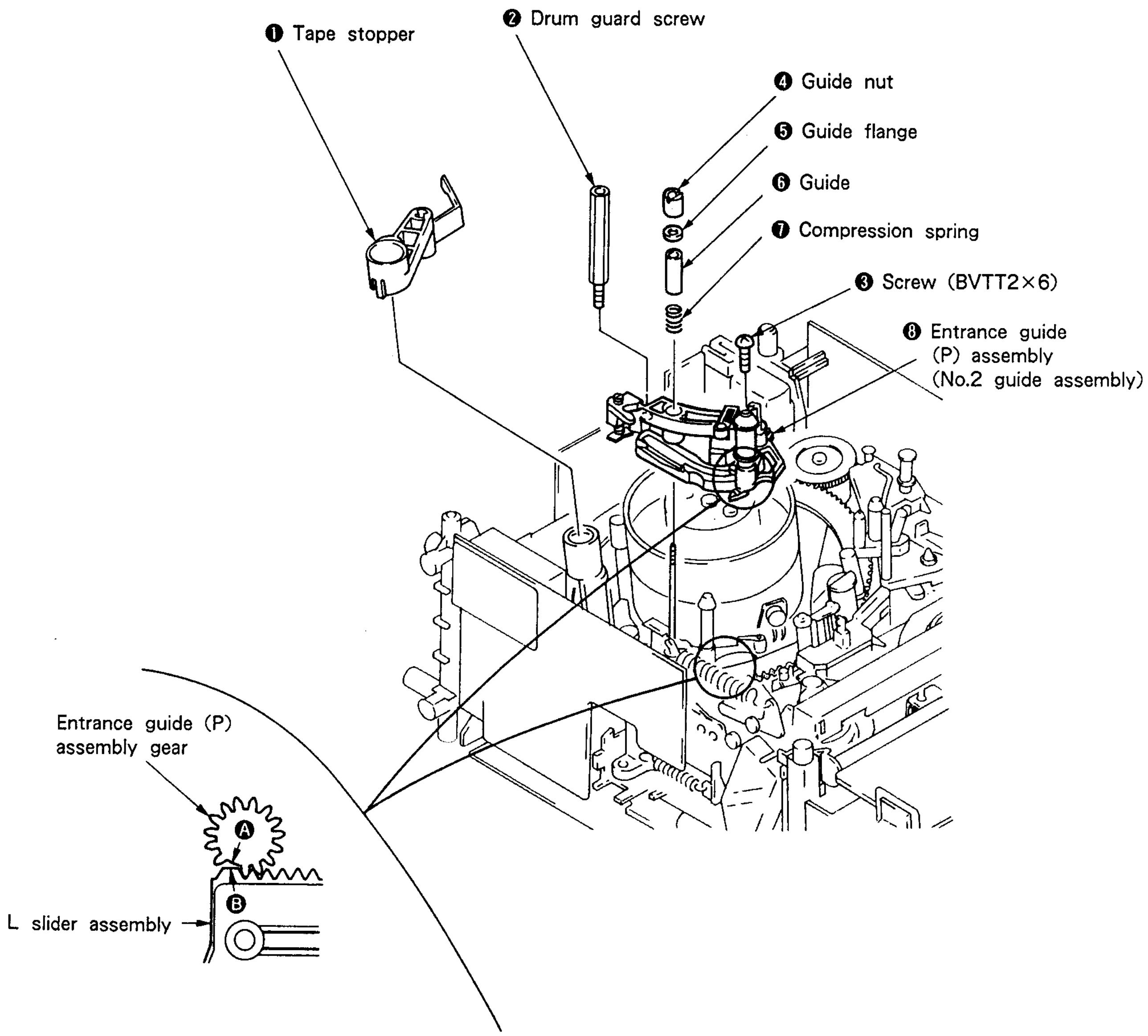

❶ Tape stopper
❷ Drum guard screw
❹ Guide nut
❺ Guide flange
❻ Guide
❼ Compression spring
❸ Screw (BVTT2×6)
❽ Entrance guide (P) assembly (No.2 guide assembly)
Entrance guide (P) assembly gear
Ⓐ
Ⓑ
L slider assembly

Fig. 8-30.

8-3-11. L Slider Assembly

1. Removal (See Fig. 8-31.)

1) Remove the tension regulator arm assembly according to 8-3-4. 1. Removal.
2) Remove the slant guide chassis assembly according to 8-3-9. 1. Removal.
3) Remove the entrance guide (P) assembly according to 8-3-10. 1. Removal.
4) Set to DRUM START mode.
5) Remove slant guide driving gear ❶.
6) Remove the two stopper washers ❷.
7) Removal the tension spring ❸ from the L slider assembly and remove the L slide assembly ❹.
8) Remove the stopper washer ❺ and remove the arm assembly ❻.

2. Mounting

1) Grease. (See Fig. 8-32.)
2) Mount the arm assembly ❻ and fix the stopper washer ❺. (See Fig. 8-31.)
3) Mount the L slider assembly ❹ and hook the tension spring ❸.
4) Fix the two stopper washers ❷.
5) Observe upper and lower sides of the slant guide driving gear ❶ and engage it so that the notch is 1 tooth away from the L slider assembly left side tooth. (See Fig. 8-33.)
6) Mount the entrance guide (P) assembly according to 8-3-10. 2. Mounting.
7) Mount the slant guide chassis assembly according to 8-3-9. 2. Mounting.
8) Mount the tension regulator arm assembly according to 8-3-4. 2. Mounting.

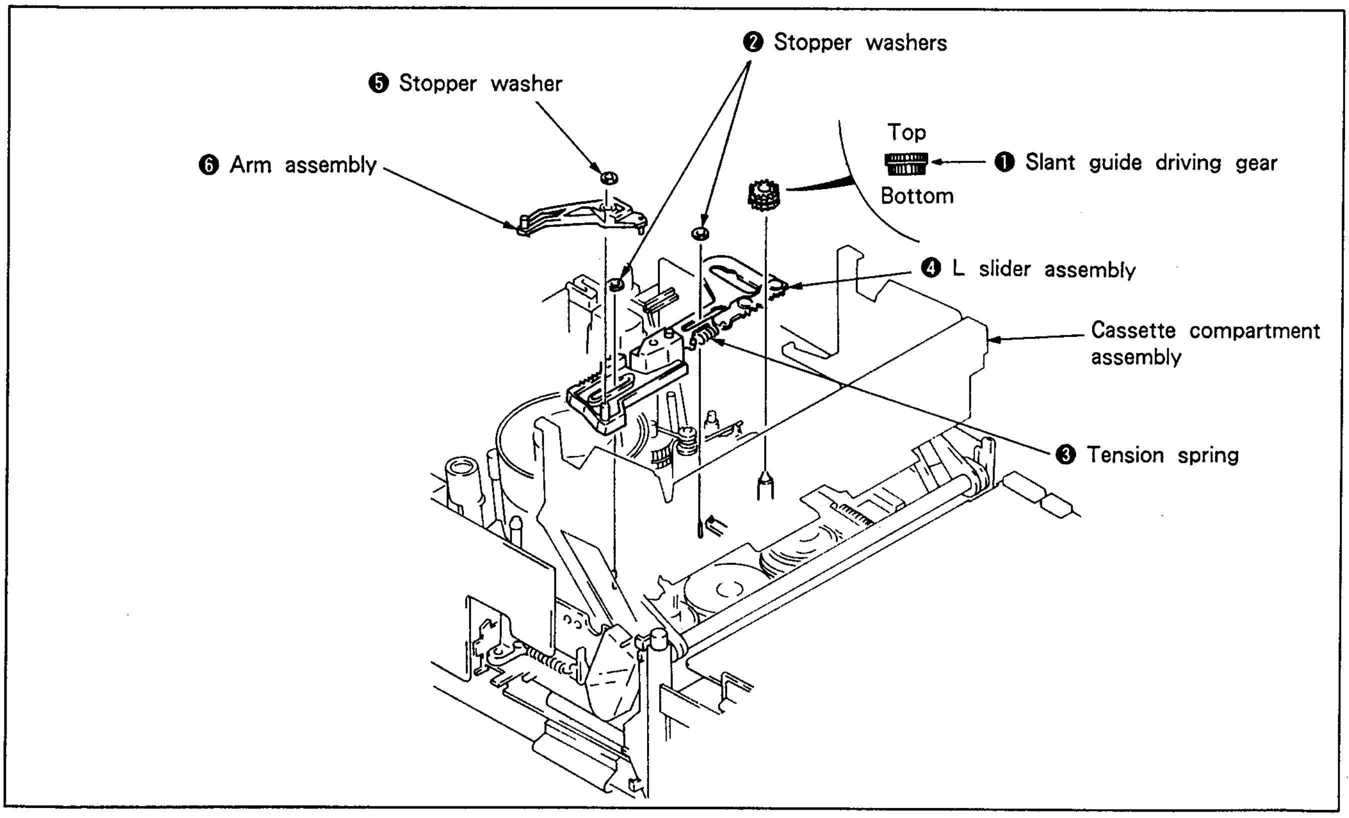

❷ Stopper washers
❺ Stopper washer
❻ Arm assembly
Top
❶ Slant guide driving gear
Bottom
❹ L slider assembly
Cassette compartment assembly
❸ Tension spring

Fig. 8-31.

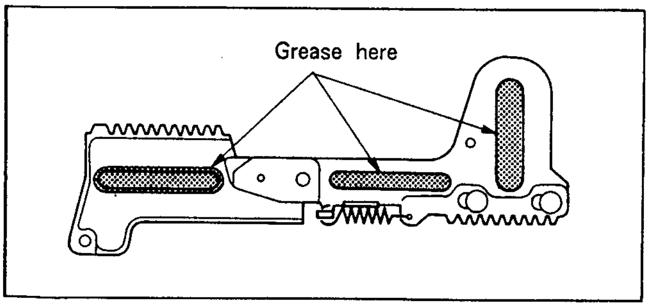

Grease here

Fig. 8-32.

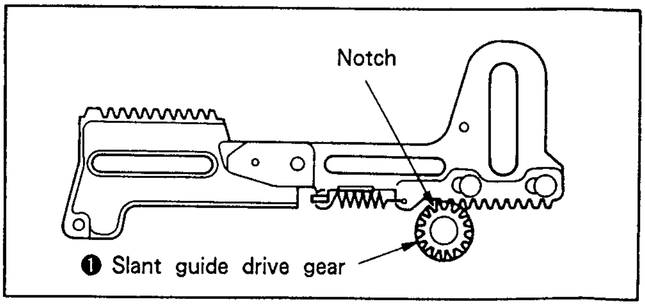

Notch
❶ Slant guide drive gear

Fig. 8-33.

8-3-12. L-SW Assembly

1. Removal (See Fig. 8-34.)

1) Remove the L slider assembly according to 8-3-11. 1. Removal.
2) Remove lock slider retainer ❶.
3) Remove screw ❷ and lock slider A ❸.
4) Remove stopper washer ❹ and remove torsion spring ❺.
5) Remove drive change assembly ❻.
6) Remove connector ❼.
7) Remove the two screws ❽ and remove the L-SW assembly ❾.

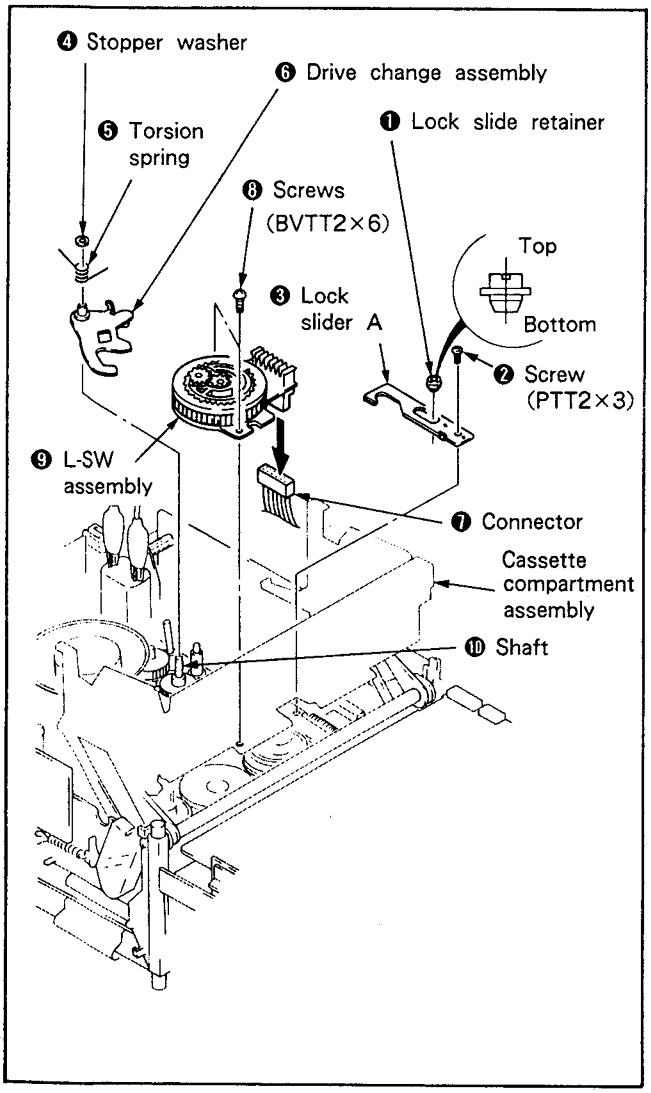

❹ Stopper washer
❻ Drive change assembly
❺ Torsion spring
❶ Lock slide retainer
❽ Screws (BVTT2×6)
Top
❸ Lock slider A
Bottom
❷ Screw (PTT2×3)
❾ L-SW assembly
❼ Connector
Cassette compartment assembly
❿ Shaft

Fig. 8-34.

2. Mounting (See Fig. 8-34)

1) Put a half drop of oil on the L-SW assembly ❾ shaft (planetary roller shaft).
2) Mount L-SW assembly ❾ and tighten with the two screws ❽.
3) Connect connector ❼.
4) Operate the mode selector and confirm that the L-SW assembly ❾ rotates.
5) Put a half drop of oil on the shaft ❿.
6) Grease the drive change assembly ❻. (See Fig. 8-35.)
7) Mount the drive change assembly ❻.
8) Hook the torsion spring ❺ and fix the stopper washer ❹.
9) Operate the mode selector and confirm that the L-SW assembly ❾ rotates.
10) Operate the mode selector and set to the position in Fig. 8-36.
11) Mount lock slider A ❸ and tighten with screw ❷.
12) Hold the lock slider retainer ❶ with the top facing up and mount it.
13) Mount the L slider assembly according to 8-3-11. 2. Mounting.

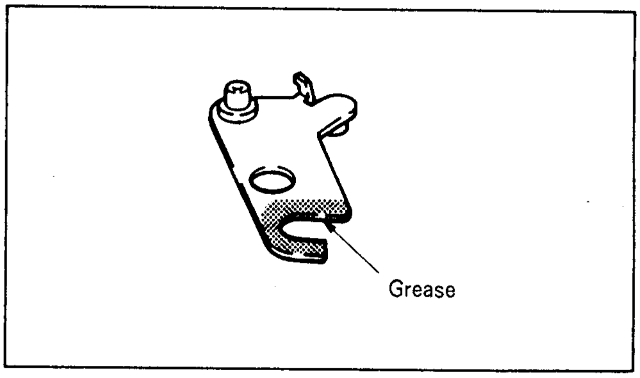


Fig. 8-35.

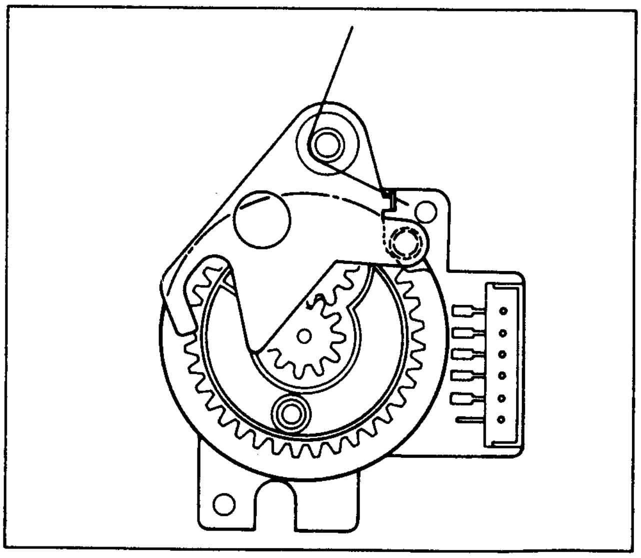


Fig. 8-36.

8-3-13. Plunger Solenoid

1. Removal (See Fig. 8-37.)

1) Open the battery holder assembly according to Section 2. DISASSEMBLY 2-20.
2) Remove the cassette compartment assembly according to Section 2. DISASSEMBLY 2-12.
3) Remove the T reel table assembly according to 8-3-2.
4) Remove spring ❶.
5) Remove the two stopper washers ❷.
6) Remove the screw ❸ and remove lock slider assembly ❹.
7) Unsolder plunger solenoid ❻ terminal at three places.
8) Remove the two screws ❺ and remove the plunger solenoid ❻.

2. Mounting (See Fig. 8-37.)

1) Insert the plunger solenoid pin ❼ into the P arm hole ❽ and mount with the two screws ❺.
2) Solder terminal of plunger solenoid ❻ at three places.
3) Mount lock slider assembly ❹ and fix with screw ❸.
4) Fix the two stopper washers ❸.
5) Hook the spring ❶.
6) Mount the T reel table assembly according to 8-3-2. 2. Mounting.
7) Mount the cassette compartment assembly according to 8-1-1.
8) Mount the battery holder assembly in opposite procedure of Section 2. DISASSEMBLY 2-20.

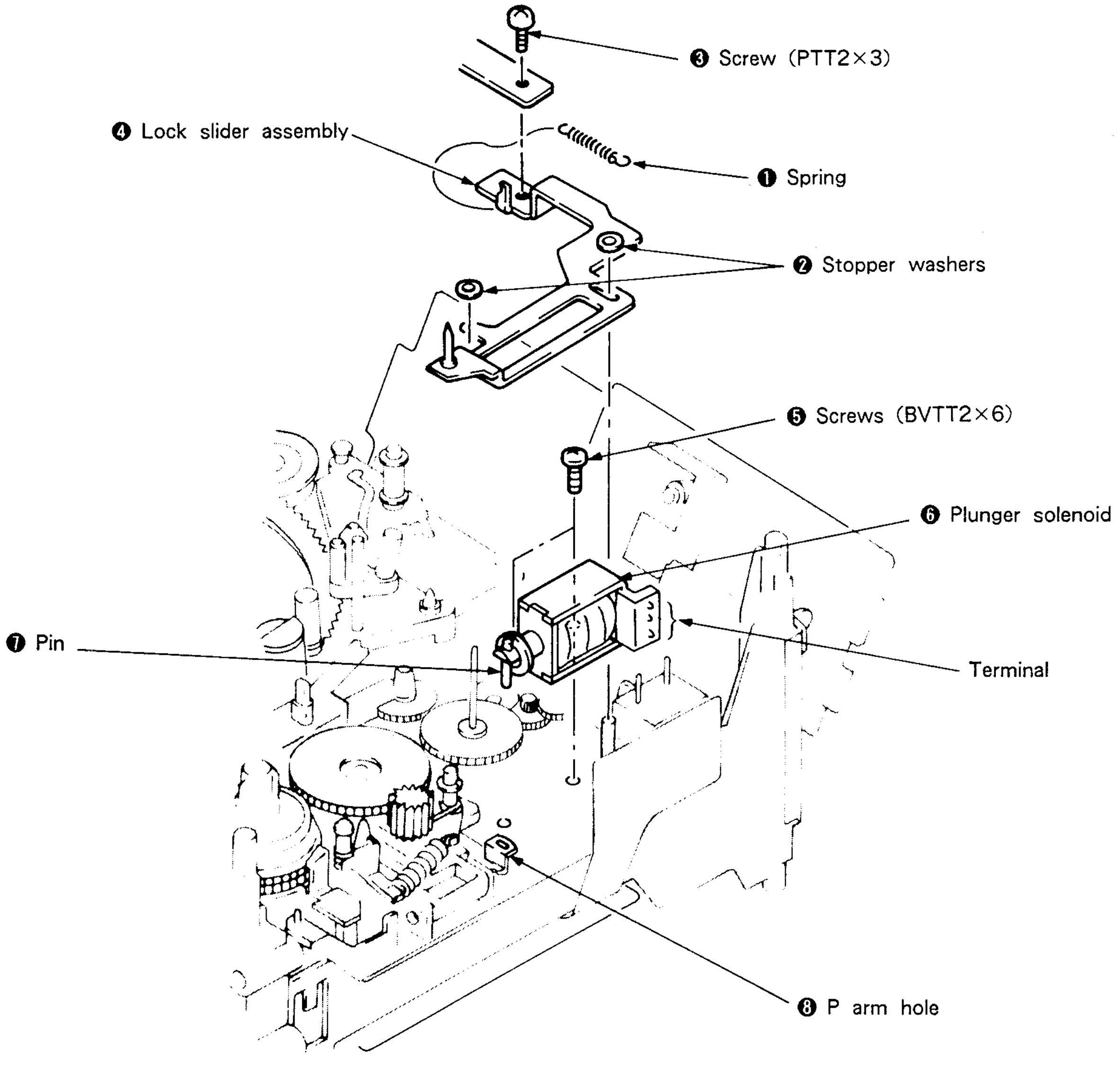

❸ Screw (PTT2×3)
❹ Lock slider assembly
❶ Spring
❷ Stopper washers
❺ Screws (BVTT2×6)
❻ Plunger solenoid
❼ Pin
Terminal
❽ P arm hole

Fig. 8-37.

8-3-14. M-SW Assembly

1. Removal (See Fig. 8-39.)

1) Open the SS-83 board according to Section 2. DISASSEMBLY 2-14. and remove CN301 connector (black) 2P from the RS-18 board and lengthen the wiring which comes outside.
2) Remove the T reel table assembly according to 8-3-2. (See Fig. 8-8.)
3) Remove stopper washer ❶ and remove the driving gear B assembly ❷.
4) Remove the LD-1 board ❸. (See Fig. 8-38.)
5) Remove lock slider assembly according to 8-3-13. 1. Removal, 3) to 5).
6) Remove the spring ❹ and remove B release arm assembly ❺.
7) Confirm that EJECT mode is set.
8) Remove stopper washer ❻ and remove the mode output gear ❼.
9) Unsolder RECOG switch ❾ terminal at three places.
10) Remove the screw ❽ and remove the RECOG switch ❾.
11) Disconnect connector ❿.
12) Remove three screws ⓫, and remove the DC motor cover assembly ⓬.
13) Push the T.S release arm in the direction of arrow Ⓐ while lifting the M-SW assembly ⓮. And then, push the T main brake assembly ⓭ in the direction of arrow Ⓑ and remove the M-SW assembly ⓮.
14) Remove solder Ⓒ and remove the control motor ⓯.

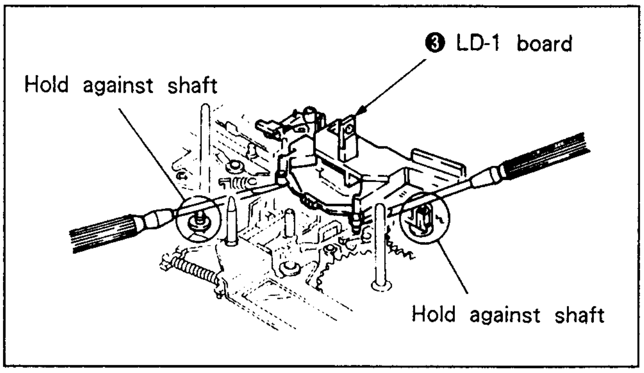

❸ LD-1 board
Hold against shaft
Hold against shaft

Fig. 8-38.

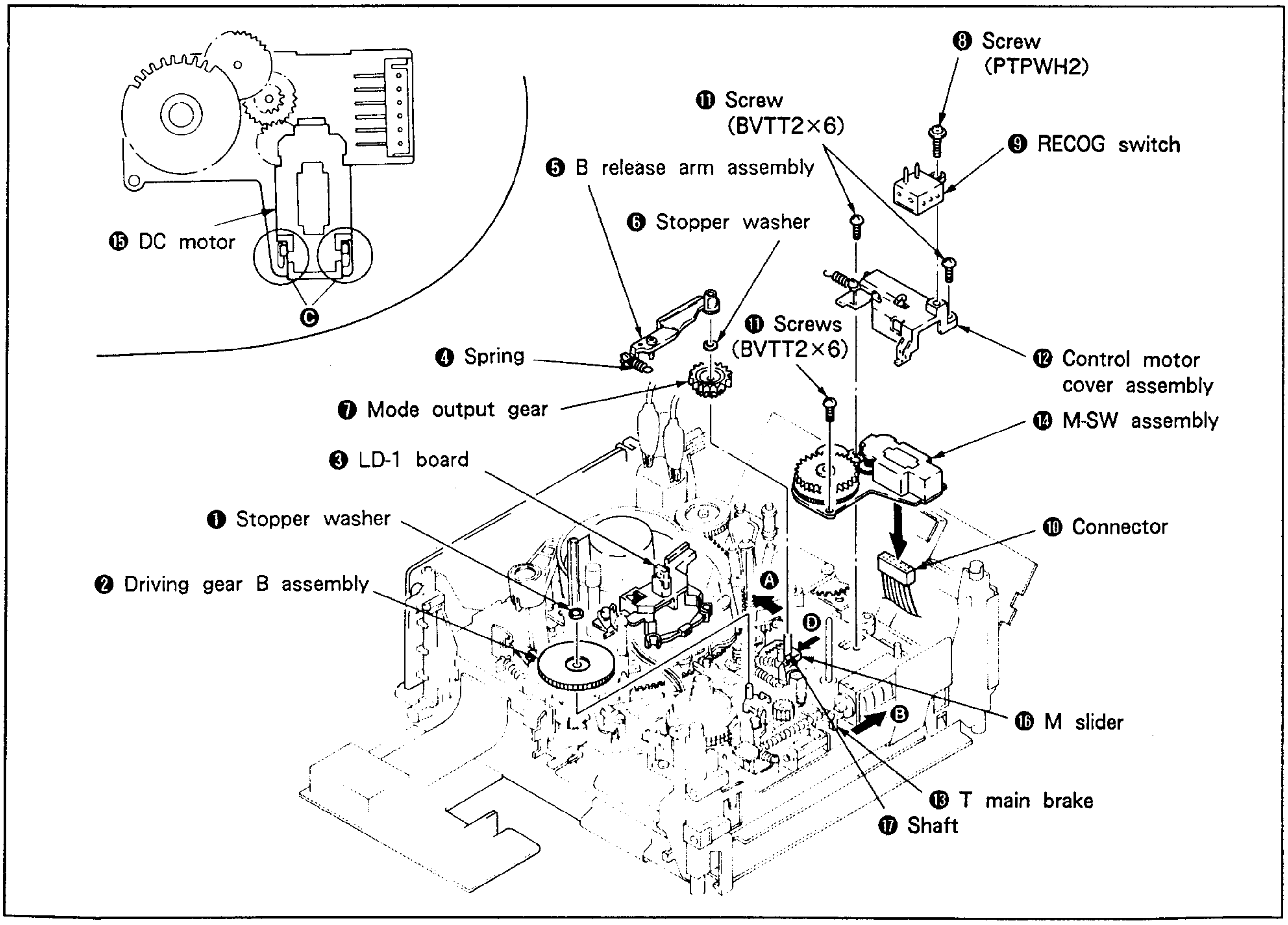

⓯ DC motor
Ⓒ
❽ Screw (PTPWH2)
⓫ Screw (BVTT2×6)
❾ RECOG switch
❺ B release arm assembly
❻ Stopper washer
⓫ Screws (BVTT2×6)
❹ Spring
⓬ Control motor cover assembly
❼ Mode output gear
⓮ M-SW assembly
❸ LD-1 board
❶ Stopper washer
❿ Connector
❷ Driving gear B assembly
Ⓐ
Ⓓ
Ⓑ
⓰ M slider
⓭ T main brake
⓱ Shaft

Fig. 8-39.

2. Mounting (See Fig. 8-39.)

1) Solder the DC motor ⓯.
2) Mount the M-SW assembly ⓮ in opposite procedure of 8-3-14. 1. Removal, 13).
3) Mount the control motor cover assembly ⓬, and tighten with the three screws ⓫.
4) Connect the connector ❿.
5) Solder the terminal of RECOG switch ❾ at three places.
6) Mount the RECOG switch ❾ and fix with screw ❽.
7) Confirm EJECT mode is set.
8) Confirm that M slider ⓰ is moved fully in the direction of arrow Ⓓ.
9) Put a half drop of oil on the shaft ⓱.
10) Mount the mode output gear ❼ so that the positioning holes are lined up. (See Fig. 8-40.)
11) Fix stopper washer ❻.
12) Set to LOADING/UNLOADING mode.
13) Mount B release arm assembly ❺ and hook spring ❹.
14) Mount the lock slider assembly according to 8-3-13. 2. Mounting, 3) to 5).
15) Mount the LD-1 board ❸.
16) Mount driving gear B assembly ❷ and fix stopper washer ❶.
17) Mount the T reel table assembly according to 8-3-2. 2. Mounting.

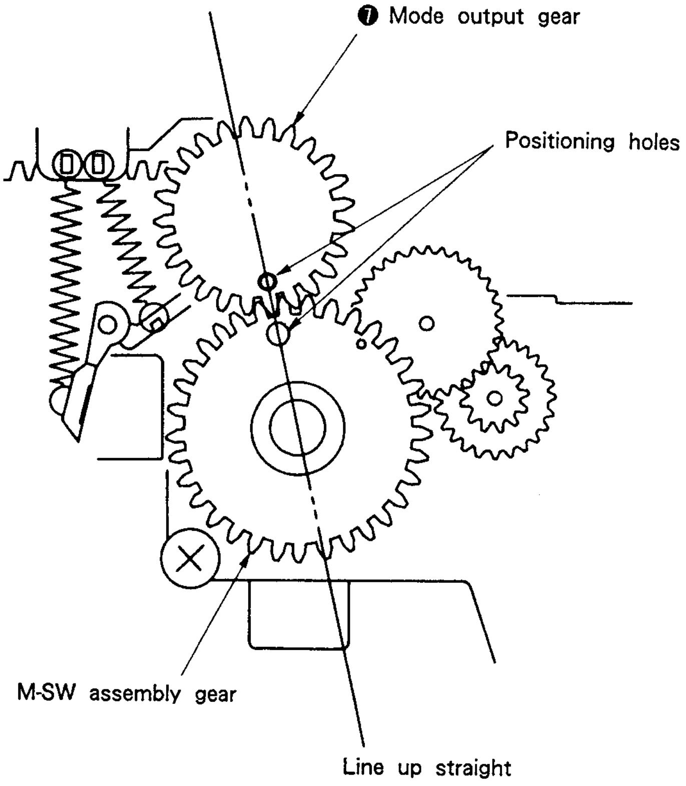


Fig. 8-40.

8-3-15. M Slider

1. Removal (See Fig. 8-41.)

1) Open the SS-83 board according to Section 2. DISASSEMBLY 2-14. and remove timing belt ❶.
2) Remove the S reel table assembly according to 8-3-1. 1. Removal. (See Fig. 8-7.)
3) Remove the T reel table assembly according to 8-3-2. 1. Removal. (See Fig. 8-8.)
4) Remove the pinch press arm assembly according to 8-3-3. 1. Removal. (See Fig. 8-9.)
5) Remove the tension regulator arm assembly according to 8-3-4. 1. Removal. (See Fig. 8-10.)
6) Remove the tension regulator band assembly according to 8-3-5. 1. Removal. (See Fig. 8-11.)
7) Remove the threading ring assembly according to 8-3-7. 1. Removal. (See Fig. 8-12.)
8) Perform 8-3-14. 1. Removal, 2) to 6).
9) Remove the arm assembly according to 8-3-11. 1. Removal, 8). (See Fig. 8-31.)
10) Remove the spring ❷.
11) Remove the two stopper washers ❸ and remove the S main brake assembly ❹ and the T main brake assembly ❺.
12) Set to LOADING TOP and LOADING/UNLOADING modes.
13) Remove the two screws ❻ and the driving complete assembly ❼.
14) Perform 8-3-14. 1. Removal, 8).
15) Remove the two springs ❽.
16) Remove REW brake assembly ❾.
17) Remove RVS arm ⓬.
18) Remove stopper washer ❿ and remove the B release slider ⓫.
19) Remove stopper washer ⓭, and remove the spring ⓮ and RL arm ⓯.
20) Move the M slider ⓰ to the right. (Leave about 5 mm at the left.)
21) Remove the E ring ⓱ and remove the pinch press lever assembly ⓲.
22) Remove spring ⓳ and remove the hard brake S ⓴.
23) Remove stopper washer ㉑, push the mode arm ㉒ in the direction of the arrow, and lift up the left side of the M slider ⓰ to remove.

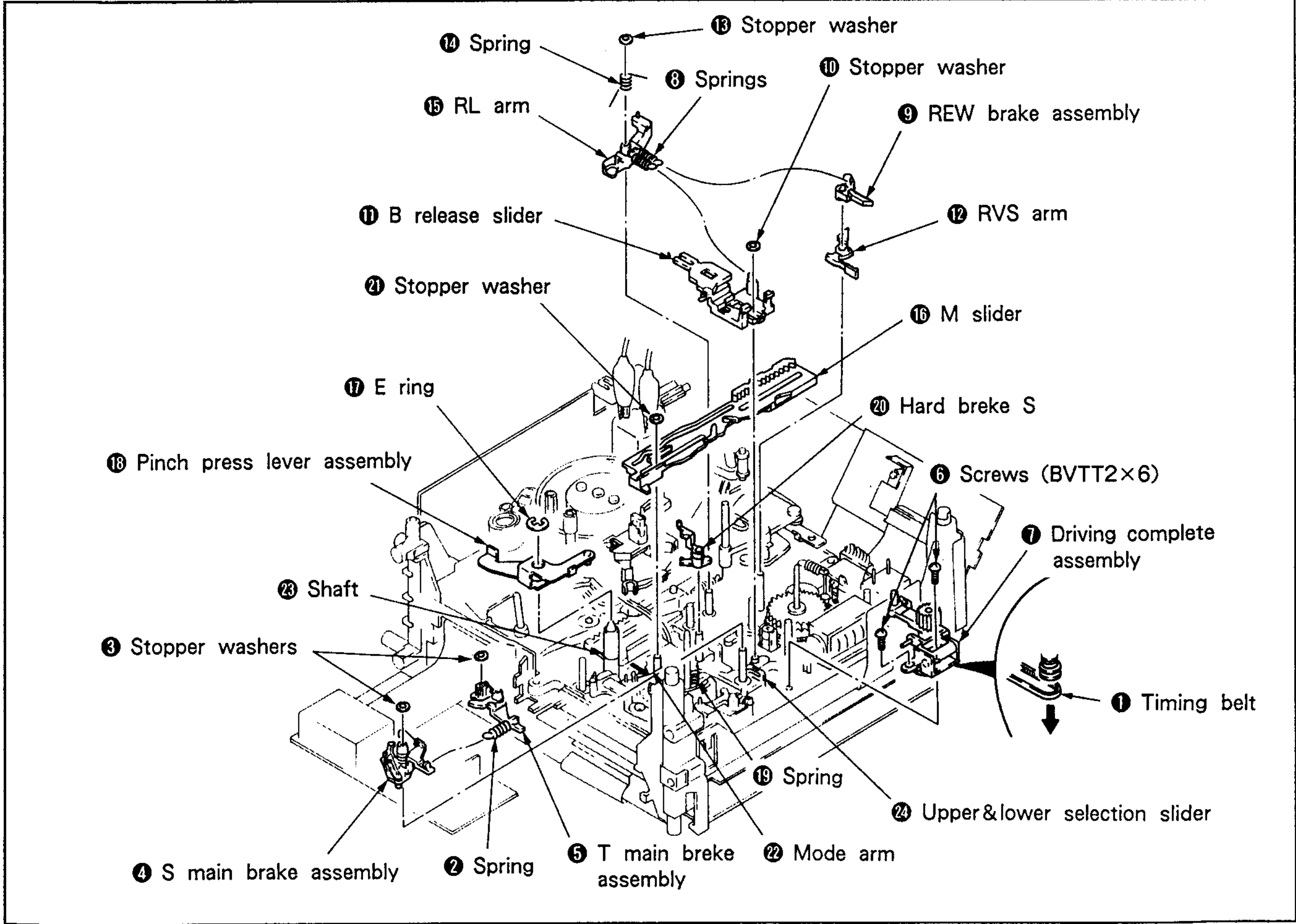

⓭ Stopper washer
⓮ Spring
❽ Springs
❿ Stopper washer
⓯ RL arm
❾ REW brake assembly
⓫ B release slider
⓬ RVS arm
㉑ Stopper washer
⓰ M slider
⓱ E ring
⓴ Hard breke S
⓲ Pinch press lever assembly
❻ Screws (BVTT2×6)
❼ Driving complete assembly
㉓ Shaft
❸ Stopper washers
❶ Timing belt
⓳ Spring
㉔ Upper&lower selection slider
❹ S main brake assembly
❷ Spring
❺ T main breke assembly
㉒ Mode arm

Fig. 8-41.

2. Mounting (See Fig. 8-41.)

1) Grease. (See Fig. 8-42.)
2) Push mode arm ㉒ in the direction of the arrow, and mount the M slider ⓰, noting the positioning of the other parts in Fig. 8-43, and fix the stopper washer ㉑.
3) Mount hard brake S ⓴ and hook spring ⓳.
4) Grease. (See Fig. 8-44.)
5) Put a half drop of oil from the shaft ㉓ groove to the bottom, mount the pinch press lever assembly ⓲ and insert the E ring ⓱.
6) Mount RL arm ⓯, hook the spring ⓮ and fix the stopper washer ⓭.
7) Mount B release slider ⓫ and fix stopper washer ❿.
8) Move the B release slider ⓫ to the drum side and mount the RVS arm ⓬.
9) Mount REW brake assembly ❾.
10) Hook the two springs ❽.

    Note : Hook the two springs as follows, being careful not to mix them up.
    - B release slider spring : total diameter 2 mm, wire diameter 0.18 mm
    - REW brake assembly spring : total diameter 1.6 mm, wire diameter 0.12 mm

11) Move the M slider ⓰ fully to the left.
12) Set to $\boxed{\text{EJECT}}$ mode.
13) Perform 8-3-14. 2. Mounting, 9), 10) and 11).
14) Set to $\boxed{\text{LOADING/UNLOADING}}$ mode.
15) Insert the driving complete assembly ❼ horizontal shaft into the upper & lower selection slider ㉔ groove, and insert the protrusion on the RVS arm ⓬ into the notch in the driving complete assembly ❼ and mount with the two screws ❻.
16) Mount the T main brake assembly ❺ and S main brake assembly ❹. Fix the two stopper washers ❸ to one assembly each and hook the spring ❷.
17) Mount the arm assembly according to 8-3-11. 2. Mounting, 2).
18) Perform 8-3-14. 2. Mounting, 13) to 17).
19) Mount the threading ring assembly according to 8-3-7. 2. Mounting.
20) Mount the tension regulator band assembly according to 8-3-5. 2. Mounting.
21) Mount the tension regulator arm assembly according to 8-3-4. 2. Mounting.
22) Mount the pinch press arm assembly according to 8-3-3. 2. Mounting.
23) Mount the T reel table assembly according to 8-3-2. 2. Mounting.
24) Mount the S reel table assembly according to 8-3-1. 2. Mounting.
25) Mount the timing belt ❶ and mount the SS-83 board in opposite procedure of Section 2. DISASSEMBLY 2-14.

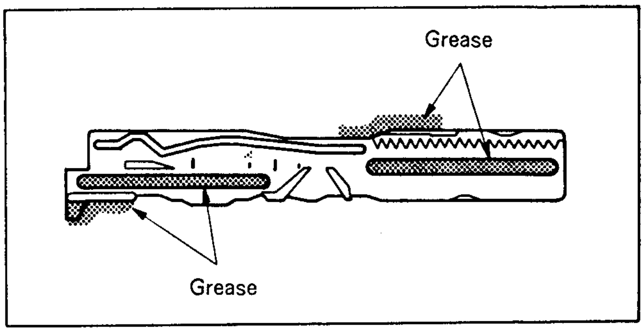


Fig. 8-42.

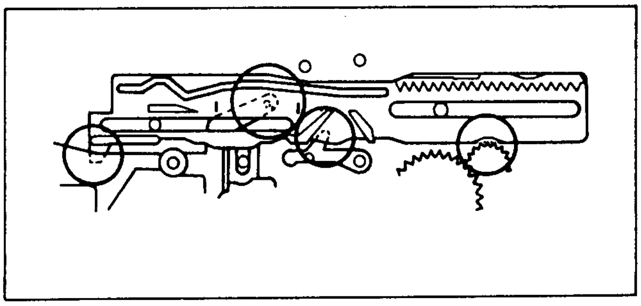


Fig. 8-43.

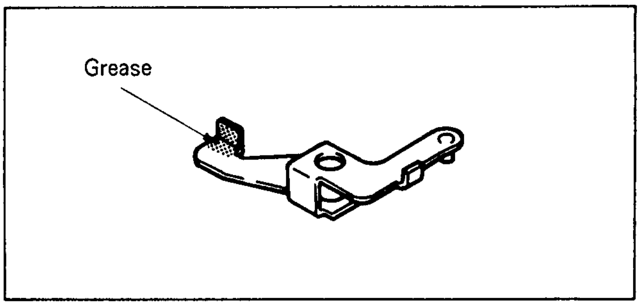


Fig. 8-44.

8-3-16. Capstan Motor Assembly

1. Removal (See Fig. 8-45. and 8-46.)

1) Remove the tape stopper according to 8-3-1. 1. Removal, 1). (See Fig. 8-30.)
2) Remove the threading ring assembly according to 8-3-7. 1. Removal. (See Fig. 8-13.)
3) Open the SS-83 board according to Section 2. DISASSEMBLY 2-14 and put the set upside down.
4) Remove the wires from the wire holder ❷.
5) Remove the screw ❶ and remove the wire holder ❷.
6) Remove the timing belt ❸.
7) Remove the screw ❹ and remove the change gear base assembly ❺ with a screwdriver, etc. (See Fig. 8-45.)

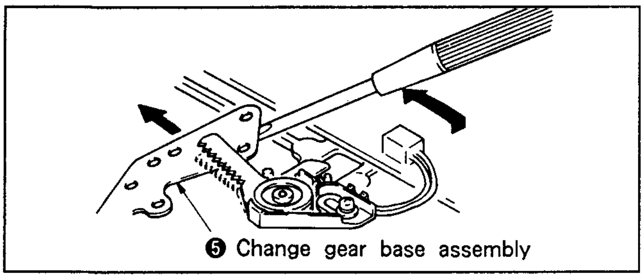

❺ Change gear base assembly

Fig. 8-45.

8) Remove the flexible connector ❻.
9) Remove the two screws ❼ and remove the capstan motor assembly ❽ in the direction of the arrow. (See Fig. 8-46.)

2. Mounting (See Fig. 8-46.)

1) Mount the capstan motor assembly ❽ and tighten with two screws ❼.
2) Connect the flexible connector ❻.
3) Mount the change gear base assembly ❺ and tighten with screw ❹.
4) Hook the timing belt ❸.
5) Mount the wire clamper ❷ and tighten with the screw ❶.
6) Arrange the wires using the wire clamper ❷.
7) Mount the SS-83 board in opposite procedure of Section 2. DISASSEMBLY 2-14.
8) Mount the threading ring assembly according to 8-3-7. 2. Mounting. (See Fig. 8-13.)
9) mount the tape stopper according to 8-3-10. 2. Mounting, 6).

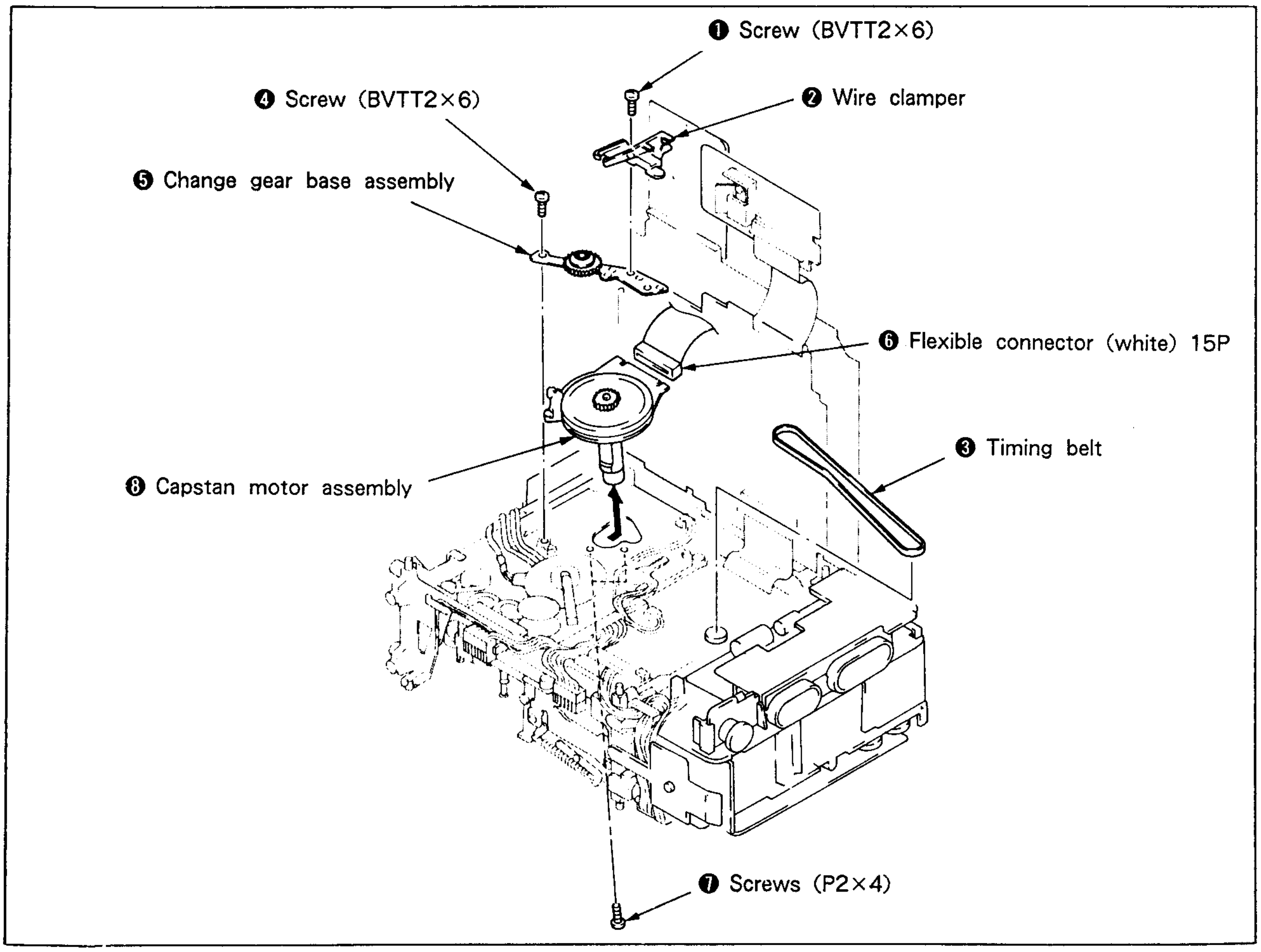

❶ Screw (BVTT2×6)
❹ Screw (BVTT2×6)
❷ Wire clamper
❺ Change gear base assembly
❻ Flexible connector (white) 15P
❸ Timing belt
❽ Capstan motor assembly
❼ Screws (P2×4)

Fig. 8-46.

8-3-17. Replacement of Rotary Upper Drum

1. Removal

- If recording is possible, remove after recording.

1) Remove all eight solders in section Ⓐ and confirm that the board and the pins on the bottom can move freely, using tweezers or the like. (See Fig. 8-47.(b).)
2) Remove the two hexagonal bolt screws ❶. (See Fig. 8-47.(a).)
3) Mount the supplied jig Ⓑ (Ref. No. J-10) on the mounting hole with the two supplied screws ❷, and mount the supplied hexagonal bolt screw ❸ on supplied jig Ⓑ, then remove the rotary upper drum ❹. (See Fig. 8-48.)

- **Repair rotary upper drum assembly**
  DGR-30-R A-7049-160-A

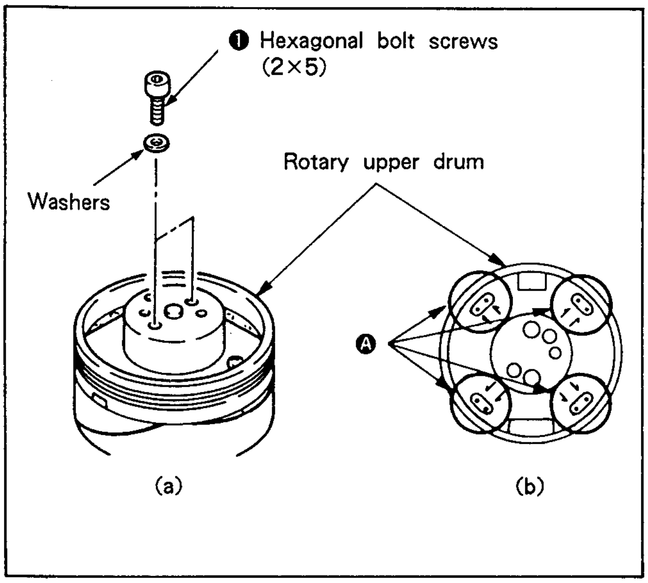

❶ Hexagonal bolt screws
(2×5)
Washers
Rotary upper drum
Ⓐ
(a)
(b)

Fig. 8-47.

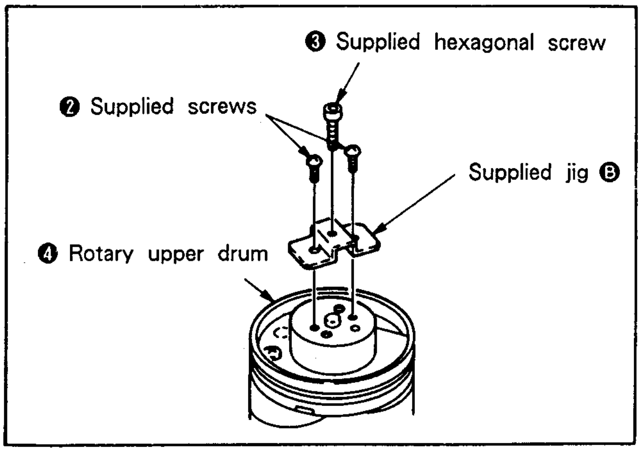

❸ Supplied hexagonal screw
❷ Supplied screws
Supplied jig Ⓑ
❹ Rotary upper drum

Fig. 8-48.

2. Mounting

1) Clean the flange surface and the surface of the rotary upper drum which contacts it, and confirm that there is no dirt or scratches.
2) Use jig Ⓒ (Ref. No. J-10) to line up rotary upper drum ❹ and the positioning hole Ⓓ, and lightly insert the rotary upper drum. At this time, confirm that the pins stick up the hole of rotary upper drum board. Fix with tweezers if the pins catch. (See Fig. 8-49.)
3) Remove jig Ⓒ and push the rotary upper drum in by hand, lightly. (See Fig. 8-50.) When it is not inserted all the way, tighten the two hexagonal bolt screws ❶ alternately to temporarily fix it.
4) Insert jig Ⓒ into the positioning hole Ⓓ again and confirm that it goes in smoothly. If not, loosen the two hexagonal bolt screws ❶ and adjust it by inserting a clock screwdriver into the hole.
5) Tighten the two hexagonal bolt screws ❸.
   Note :Be careful not to tighten too much.
6) Solder the pins in section Ⓐ. (See Fig. 8-47.)
   Note :Be careful that the solder does not go under the board.

Note : After mounting, be sure to perform 8-4. TAPE PATH ADJUSTMENT.

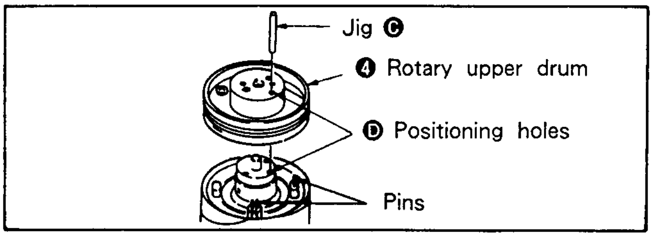

Jig Ⓒ
❹ Rotary upper drum
Ⓓ Positioning holes
Pins

Fig. 8-49.

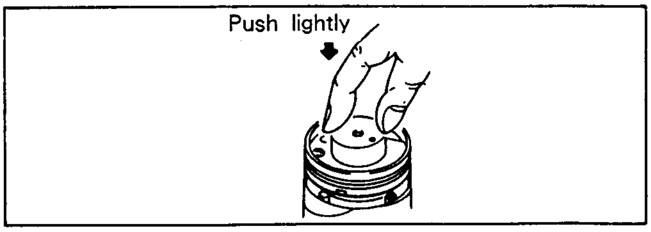

Push lightly

Fig. 8-50.

8-3-18. Replacement of Drum Assembly

1. Removal (See Figs. 8-51. and 8-52.)

1) Open the SS-83 board according to Section 2. DISASSEMBLY 2-14.
2) Remove the screw ❶.
3) Remove the screw ❷ and remove the shaft ground terminal ❸.
4) Remove the five connectors ❹.
5) Remove the two screws (fitting screw assembly) ❺.
6) Remove the drum assembly ❻.

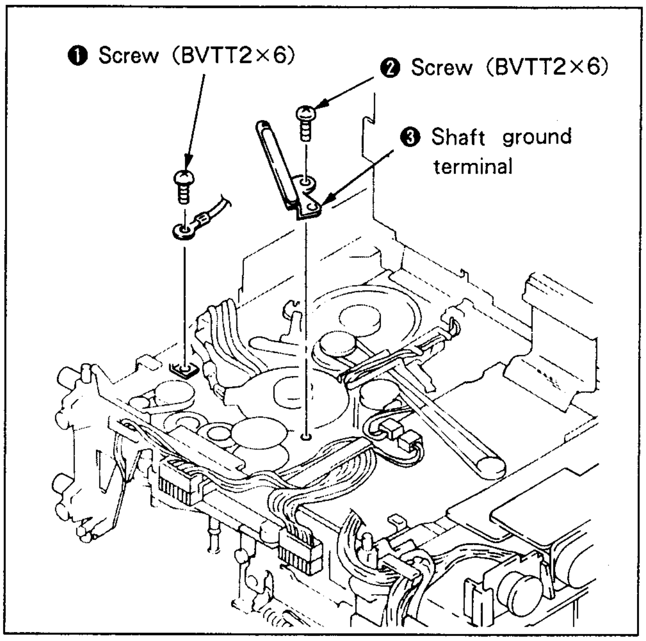

❶ Screw (BVTT2×6)
❷ Screw (BVTT2×6)
❸ Shaft ground terminal

Fig. 8-51.

2. Mounting (See Figs. 8-51. and 8-52.)

1) Mount the drum assembly ❻ and tighten with the two screws (fitting screw assembly) ❺.
2) Connect the five connectors ❹.
3) Mount the shaft ground terminal ❸ and tighten with the screw ❷.
4) Tighten the screw ❶.

Note : Be sure to perform 8-4. TAPE PATH ADJUSTMENT after mounting.

- **Repair drum assembly**
  DGH-30A-R A-7048-159-A

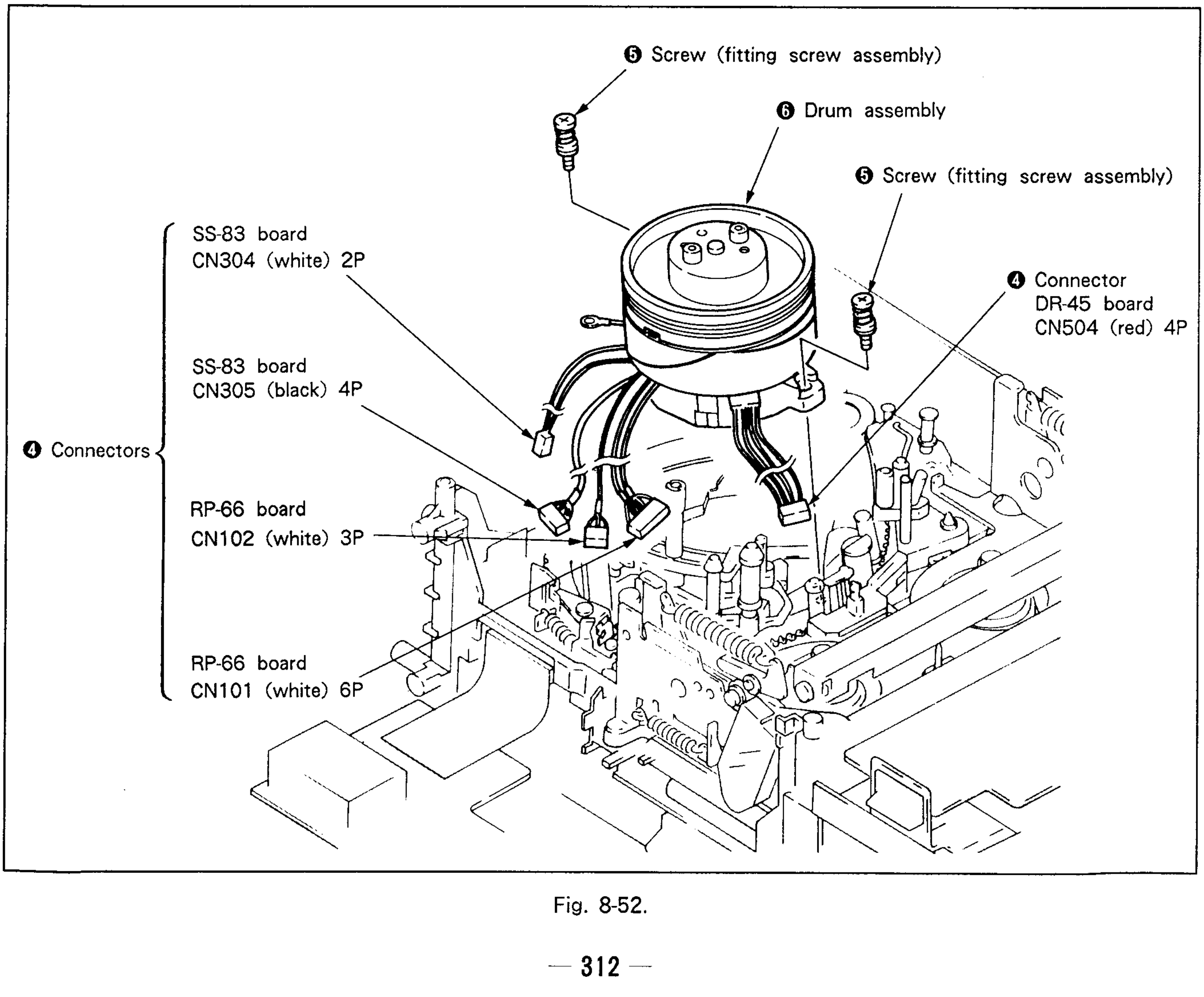

❺ Screw (fitting screw assembly)
❻ Drum assembly
❺ Screw (fitting screw assembly)
❹ Connector
DR-45 board
CN504 (red) 4P
❹ Connectors
SS-83 board
CN304 (white) 2P
SS-83 board
CN305 (black) 4P
RP-66 board
CN102 (white) 3P
RP-66 board
CN101 (white) 6P

Fig. 8-52.

8-3-19. Adjustment after Replacement of No.3 Guide and No.4 Guide

For replacement of both No.3 and No.4 guides, line up the tape along the upper flange after replacing. (Fig. 8-96.)

8-3-20. No.5 Guide Assembly

1. Removal (See Fig. 8-53.)

1) Remove the tape stopper according to 8-3-10. 1. Removal, 1).
2) Remove the three screws ❶ and remove the No.5 guide assembly.
3) Remove the guide nut ❷ and remove No.5 guide boss ❸, No.5 guide flange ❹, No.5 guide ❺ and spring ❻.

2. Mounting (See Fig. 8-53.)

1) Mount the spring ❻, No.5 guide ❺, No.5 guide flange ❹ and No.5 guide boss ❸ to the No.5 guide shaft ❼, and tighten the guide nut ❷.
2) Mount the No.5 guide assembly and tighten with the three screws ❶.
3) Mount the tape stopper according to 8-3-10. 2. mounting, 5).

Note : Be sure to perform 8-4. TAPE PATH ADJUSTMENT after mounting.

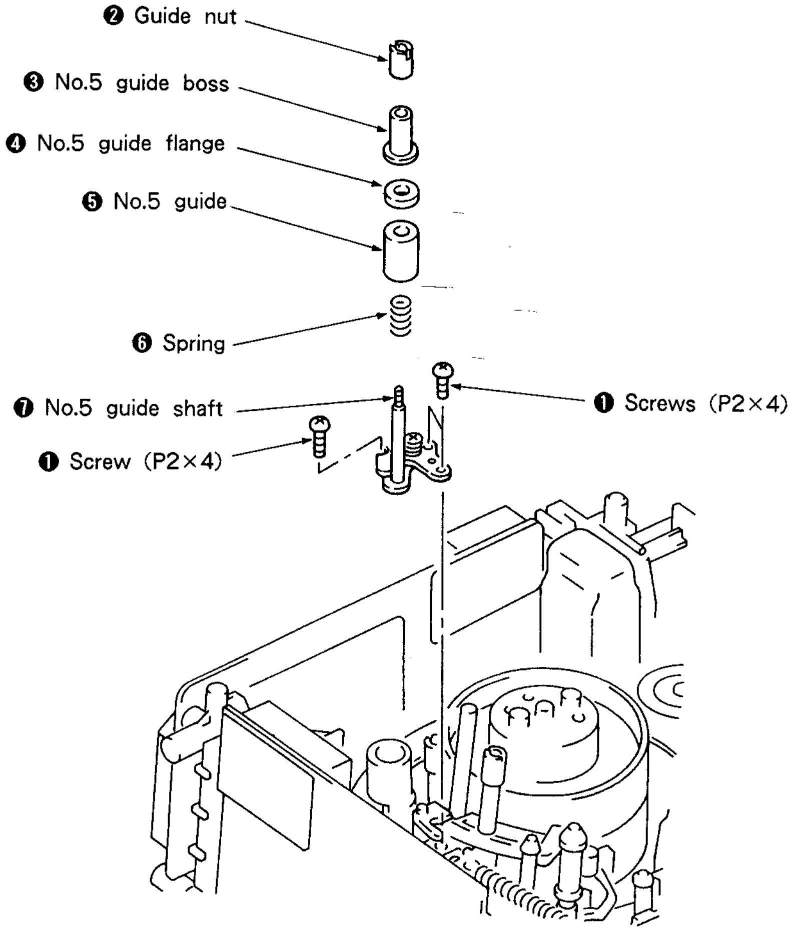

❷ Guide nut
❸ No.5 guide boss
❹ No.5 guide flange
❺ No.5 guide
❻ Spring
❼ No.5 guide shaft
❶ Screw (P2×4)
❶ Screws (P2×4)

Fig. 8-53.

8-3-21. FWD Back Tension Adjustment
(See Fig. 8-54. and 8-55.)

Note : Prior to adjustment, have the tape run in FWD direction for more than 2 minutes.

1) Set to $\boxed{\text{LOADING END}}$, $\boxed{\text{FWD}}$ mode.
2) Loosen band adjustment plate ❶ screw ❷ and move the band adjustment plate ❶ in the direction of arrow 🅐. And confirm that range of movement θ for No.1 guide.
3) Tighten the screw ❷ so that the position of No.1 guide cap is $1/3\,\theta$. (See Fig. 6-54.)
4) Place tension measurement reel (Ref. No. J-7) ❹ on the S reel table assembly ❸ and set the tape along No.1 guide, No.2 guide, No.3 guide and the drum.
5) Pull dial tension gauge (Ref. No. J-6) ❺ in the direction of arrow 🅑 and hook the spring ❼ onto the tension regulator spring hook assembly ❻ so that the value becomes 13.0±1 g, as shown below.
   Value too large : arrow 🅒 direction
   Value too small : arrow 🅓 direction

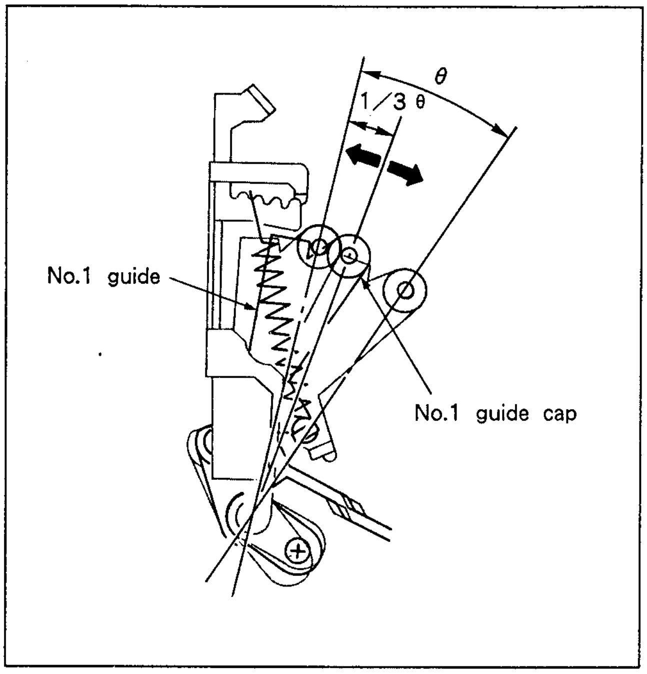

θ
1/3 θ
No.1 guide
No.1 guide cap

Fig. 8-54.

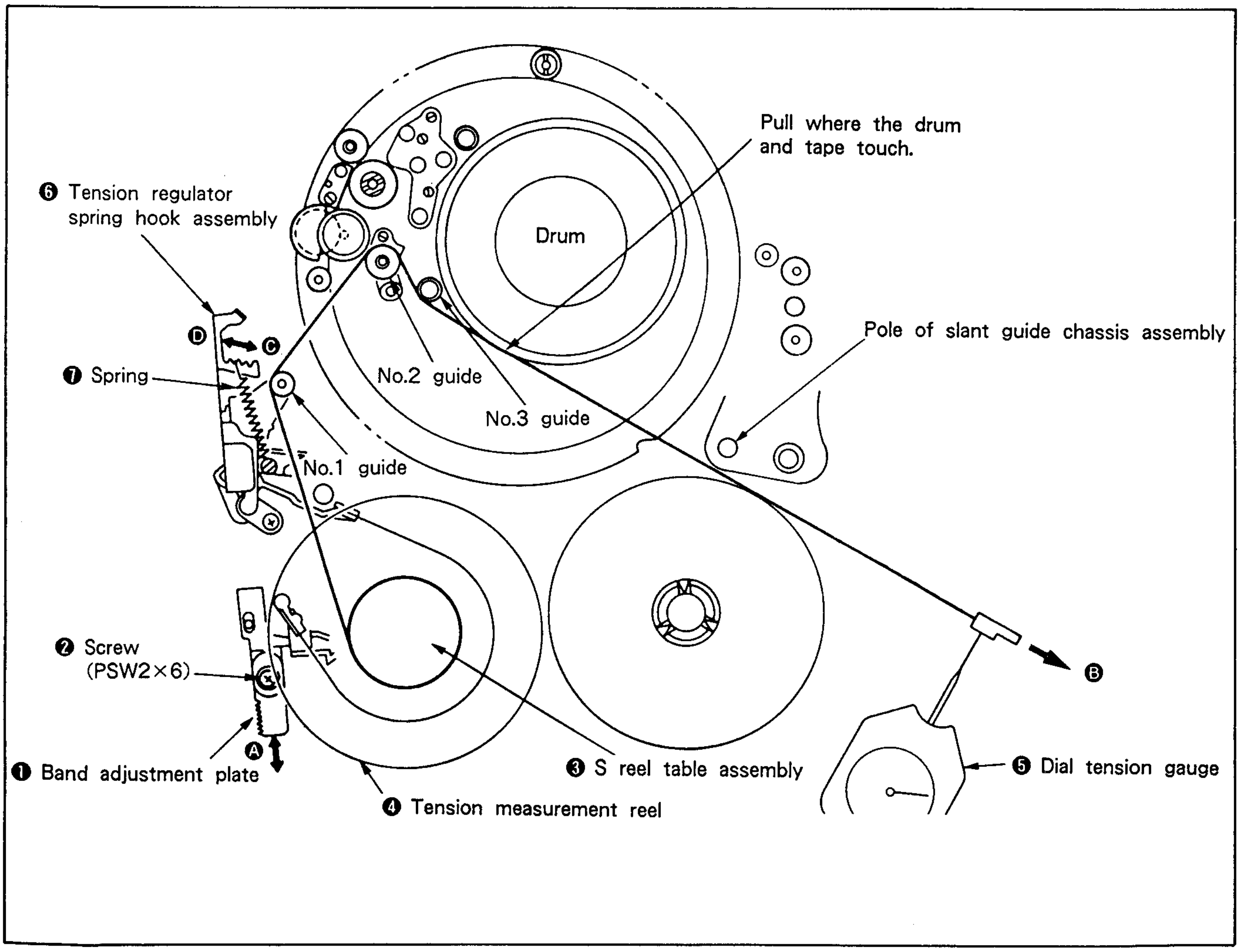

Pull where the drum and tape touch.
❻ Tension regulator spring hook assembly
Drum
🅓
🅒
❼ Spring
No.2 guide
No.3 guide
Pole of slant guide chassis assembly
No.1 guide
❷ Screw (PSW2×6)
🅐
❶ Band adjustment plate
❸ S reel table assembly
❹ Tension measurement reel
🅑
❺ Dial tension gauge

Fig. 8-55.

8-3-22. Check and Adjustment of Timing Belt Tension

1) Remove the timing belt. (See 8-3-15. 1. Removal, 1).)
2) Cover the LED portion of tape end sensor (DR-45 board) with vinyl tape and perform loading.
3) Short pin ③ of CN302 on the SS-83 board and GND. (See Fig. 8-56.)
4) Remove the pinch press arm side (round hook) of the tension spring attached to the pinch press arm assembly. (See Fig. 8-57.)
5) Push in the accidental erasure prevention pin of the RECOG switch, fix it with the tape and press the REC button to set to REC mode. (See Fig. 8-58.)
6) Measure the voltage (Vo) at both sides of R523 on the DR-45 board using a voltmeter (No lead state) (See Fig. 8-59.)
7) Mount the timing belt. (See 8-3-16. 2. Mounting, 4).)
8) Remove the driving gear B assembly according to 8-3-14. 1. Removal, 3).
9) Select the REC mode according to 5) and measure the voltage (Vx) at both sides of R523 as described in 6). (tension adjustment)
10) Confirm that the voltage (Vx) for tension adjustment is 22 mV to 44 mV higher than the voltage in the no load state (Vo). If not, adjust by the procedure described below.

    Adjustment Procedure :

    i) Loosen screw ❶ and slide the idler assembly in the direction of the arrow Ⓐ, then tighten with screw ❶. (See Fig. 8-60.)

    ii) Perform 9) and confirm again.

    iii) Repeat i) and ii) until the specifications are met.
11) Remove the short between Pin ③ of CN302 on the SS-83 board and GND.
12) Mount the driving gear B assembly and pinch press arm assembly tension spring. (See Fig. 8-57.)

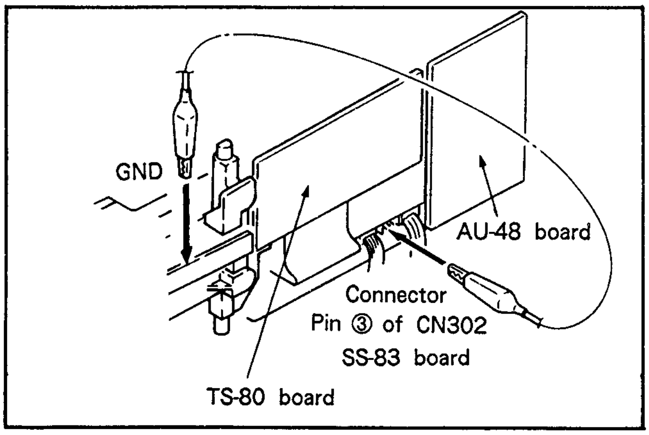


Fig. 8-56.

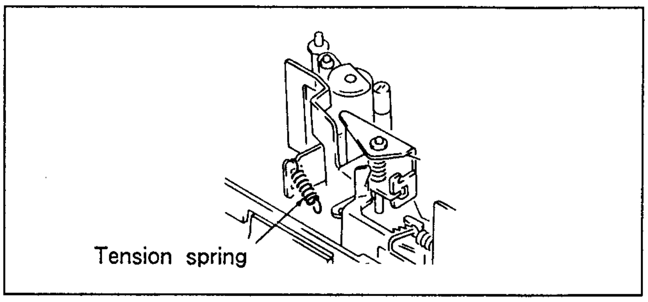


Fig. 8-57.

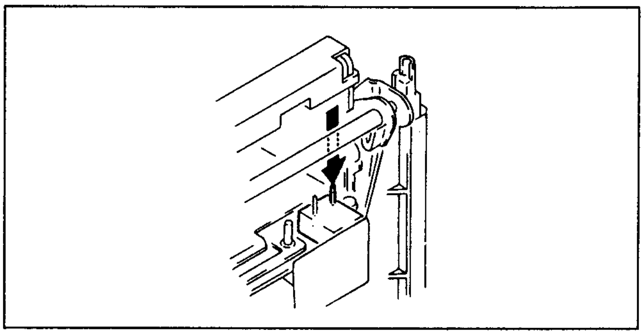


Fig. 8-58.

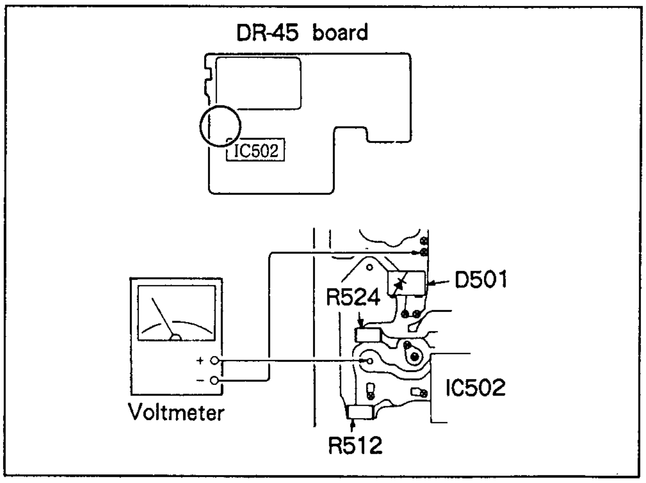


Fig. 8-59.

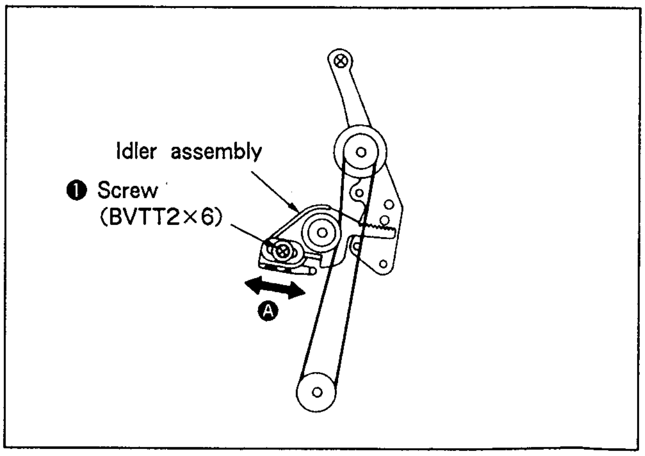


Fig. 8-60.

8-3-23. Check of S and T Main Brake Torque

1) Open the battery holder assembly according to Section 2. DISASSEMBLY 2-20.
2) Remove the cassette compartment assembly according to Section 2. DISASSEMBLY 2-12.

1. S main brake torque (See Figs. 8-61. and 8-62.)

1) Set to FF/REW mode.
2) Place the tension measurement reel (Ref. No. J-8) on the S reel table.
3) Pull the dial tension gauge (Ref. No. J-6) in the direction of the arrow and confirm that the specifications are satisfied.

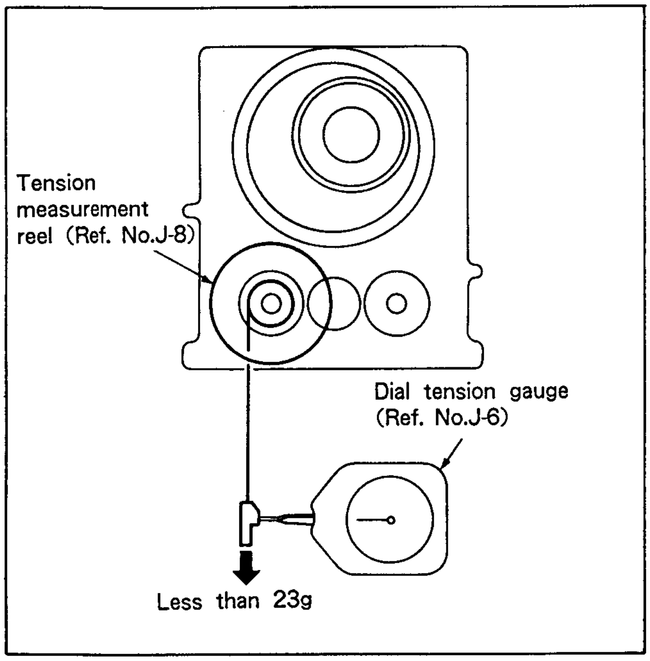

Tension measurement reel (Ref. No.J-8)
Dial tension gauge (Ref. No.J-6)
Less than 23g

Fig. 8-61.

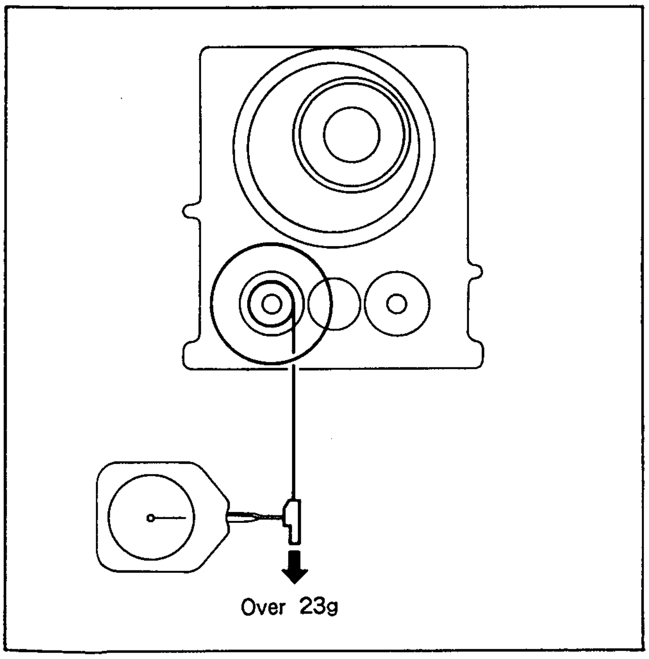


Fig. 8-62.

2. T main brake torque (See Figs. 8-63. and 8-64.)

1) Set to FF/REW mode.
2) Place the tension measurement reel (Ref. No. J-8) on the T reel table.
3) Pull the dial tension gauge (Ref. No. J-6) in the direction of the arrow and confirm that the specifications are satisfied.

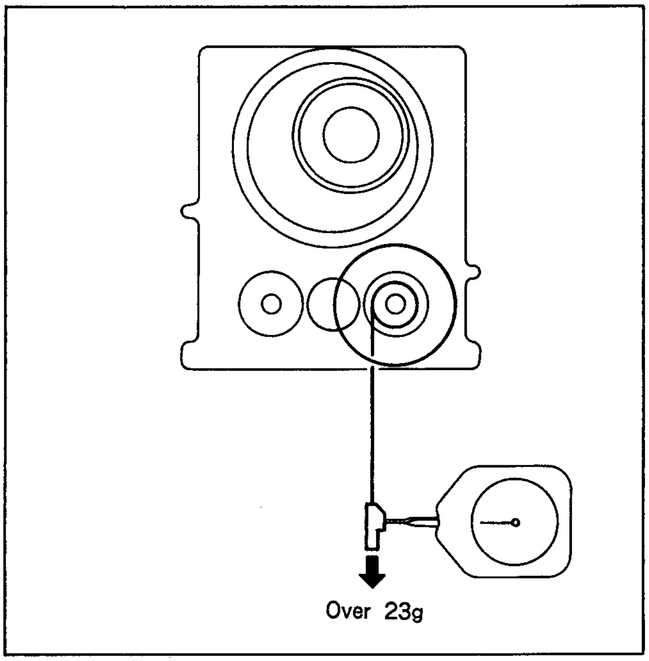


Fig. 8-63.

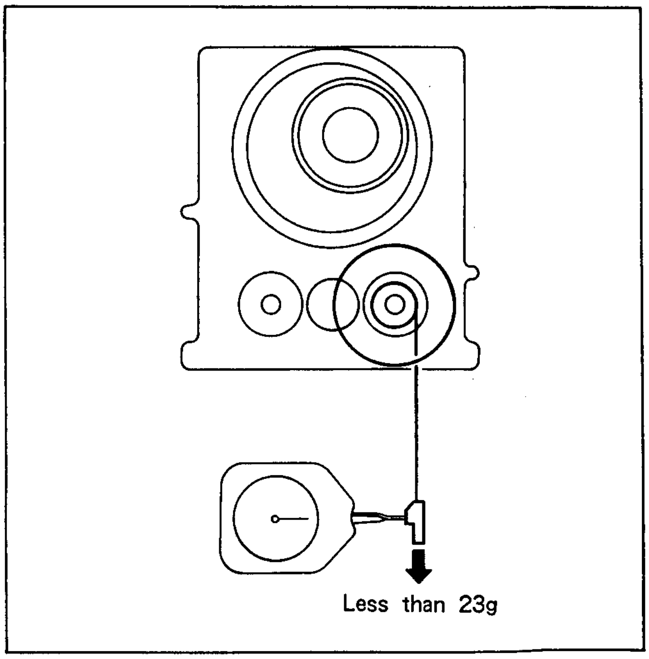

Less than 23g

Fig. 8-64.

8-3-24. Check of S and T Soft Brake Torque

1) Open the battery holder assembly according to Section 2. DISASSEMBLY 2-20.
2) Remove the cassette compartment assembly according to Section 2. DISASSEMBLY 2-12.

1. S soft brake torque (See Fig. 8-65.)

1) Set to FF/REW mode.
2) Place the tension measurement reel (Ref. No. J-8) on the S reel table.
3) Release the S main brake with a finger.
4) Pull the dial tension gauge (Ref. No. J-6) in the direction of the arrow and confirm that the specifications are satisfied.

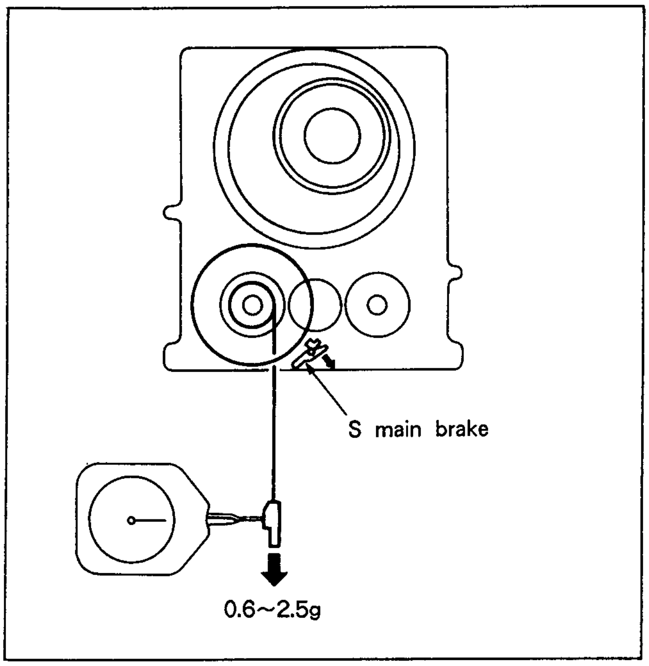


Fig. 8-65.

2. T soft brake torque (See Fig. 8-66.)

1) Set to REV mode.
2) Place the tension measurement reel (Ref. No. J-8) on the T reel table.
3) Release the T main brake with a finger.
4) Pull the dial tension gauge (Ref. No. J-6) in the direction of the arrow and confirm that the specifications are satisfied.

Note : In REV mode, both T soft brake and REW brake are operated.

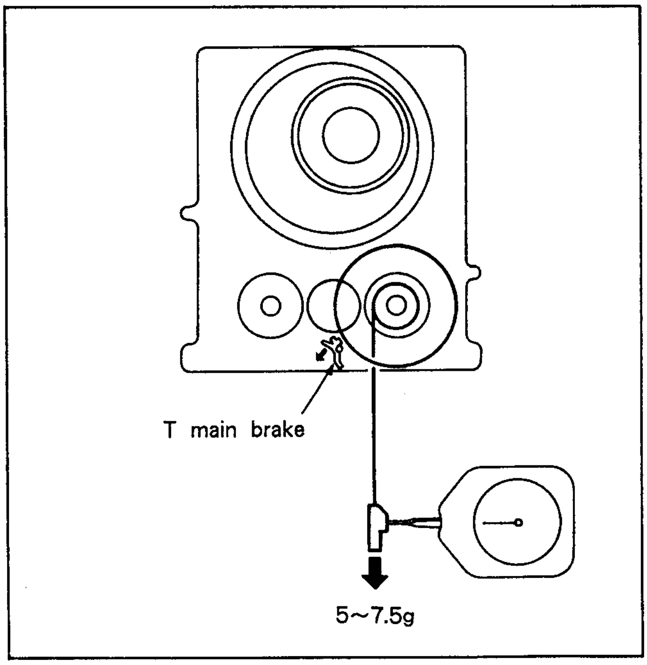


Fig. 8-66.

8-3-25. Check of REV and REW Brake Torque

1) Open the battery holder assembly according to Section 2. DISASSEMBLY 2-20.
2) Remove the cassette compartment assembly according to Section 2. DISASSEMBLY 2-12.

1. REV brake torque (See Fig. **8-67.**)

1) Set to REV mode.
2) Place the tension measurement reel (Ref. No. J-8) on the S reel table.
3) Release the S main brake with a finger.
4) Pull the dial tension gauge (Ref. No. J-6) in the direction of the arrow and confirm that the specifications are satisfied.

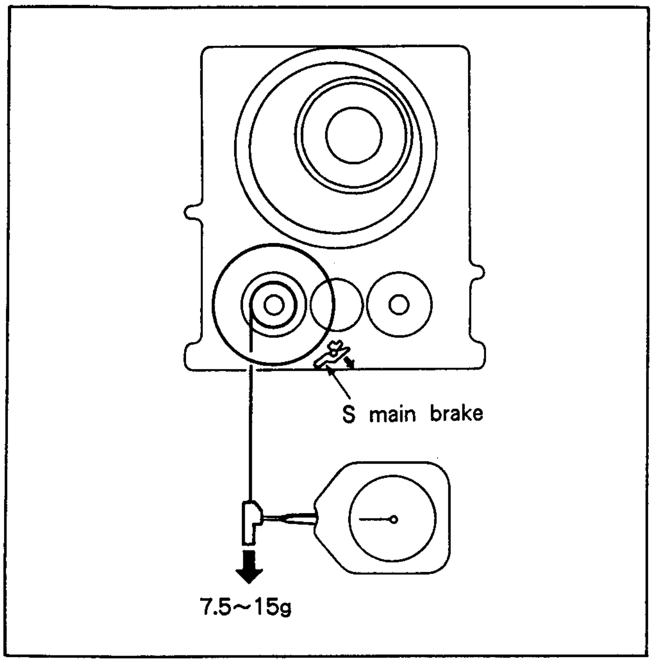


Fig. 8-67.

2. REW brake torque (See Fig. **8-68.**)

1) Set to FF/REW mode.
2) Place the tension measurement reel (Ref. No. J-8) on the T reel table.
3) Release the T main brake with a finger.
4) Pull the dial tension gauge (Ref. No. J-6) in the direction of the arrow and confirm that the specifications are satisfied.

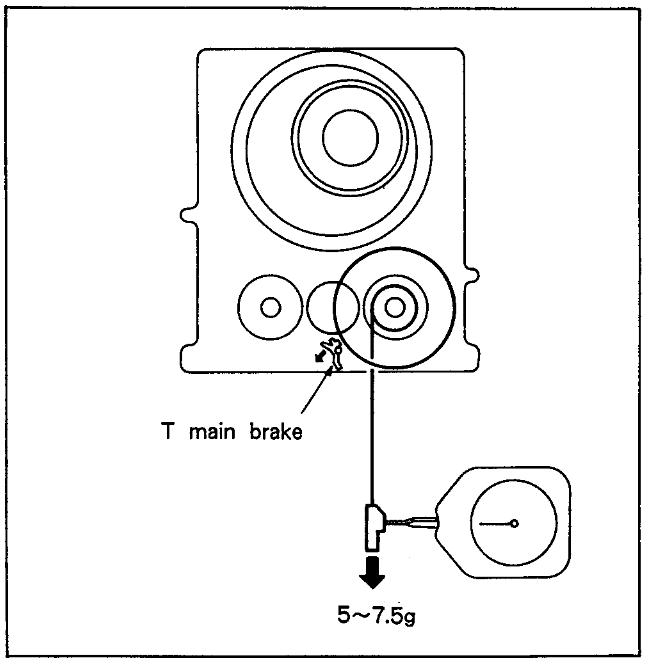


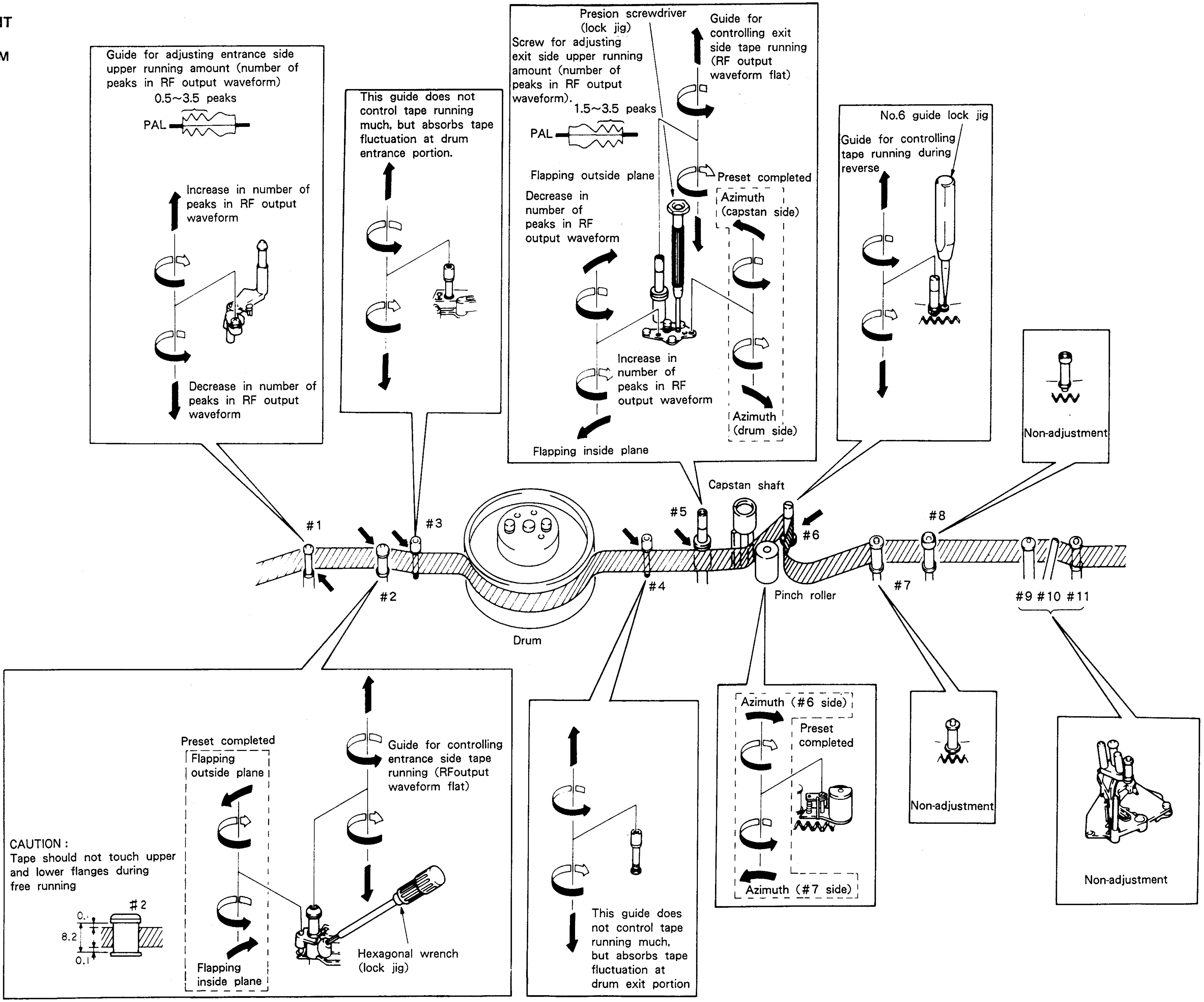
Fig. 8-68.

8-3-26. Check by FWD and RVS Winding Torque Cassette

1) Insert the FWD and RVS winding torque cassette (Ref. No. J-12).
2) Set to playback mode and confirm that T reel table torque is 9.5 to 15.5 g·cm.
3) Set to playback mode and confirm that the S reel table torque immediately after the REW button is pressed is 17 to 23 g·cm.
4) Replace on appropriate reel table if the above specifications are not satisfied.

8-4. TAPE PATH ADJUSTMENT

TAPE RUNNING SYSTEM DIAGRAM


Guide for adjusting entrance side upper running amount (number of peaks in RF output waveform)
0.5~3.5 peaks
PAL
Increase in number of peaks in RF output waveform
Decrease in number of peaks in RF output waveform
This guide does not control tape running much, but absorbs tape fluctuation at drum entrance portion.
Presion screwdriver (lock jig)
Screw for adjusting exit side upper running amount (number of peaks in RF output waveform).
1.5~3.5 peaks
PAL
Guide for controlling exit side tape running (RF output waveform flat)
Flapping outside plane
Preset completed
Decrease in number of peaks in RF output waveform
Azimuth (capstan side)
Increase in number of peaks in RF output waveform
Azimuth (drum side)
Flapping inside plane
No.6 guide lock jig
Guide for controlling tape running during reverse
Non-adjustment
Capstan shaft
#1
#2
#3
#4
#5
#6
#7
#8
#9 #10 #11
Drum
Pinch roller
Preset completed
Flapping outside plane
Flapping inside plane
Guide for controlling entrance side tape running (RFoutput waveform flat)
Hexagonal wrench (lock jig)
CAUTION :
Tape should not touch upper and lower flanges during free running
#2
0.1
8.2
0.1
This guide does not control tape running much, but absorbs tape fluctuation at drum exit portion
Azimuth (#6 side)
Preset completed
Azimuth (#7 side)
Non-adjustment
Non-adjustment

- Perform this adjustment after confirming that Section 7. CAMERA SECTION ADJUSTMENT and Section 9. VIDEO SECTION ADJUSTMENT are completed.

[REGARDING TRACK SHIFT JIG]

The 8 mm video system employs a high precision tracking ATF (auto track finding) which instantaneously controls the tape running speed with the four kinds of pilot signals. In this way, the tracking adjustment knob becomes unnecessary, and accurate tracing has become possible.

On the other hand however, there has been difficulty in adjusting the tape path system with the ATF method, that is it was impossible to make a perfect adjustment because the ATF automatically corrected even small head-tracing errors.

Because of this, adjustment is carried out to the tape path system by using the track shift jig (Ref. No. J-6080-891-A). As the track shift jig forcibly releases the ATF and sets the tracking amount (track shift) manually, the adjustment of the tape path system can easily be carried out.

- Previous track shift & monitor jig (J-6080-851-A) also can be used, Use the specified connection cord for connection.

8-4-1. Connection of Track Shift Jig

(For details, see the INSTRUCTION MANUAL OF TRACK SHIFT JIG.)

[Connector Connection]

Connector the track shift jig and CCD-V200E as shown in Fig. 8-69.

Connect RF／SWP connector to CN104 on RP-66 board, and the CTL connector to CN507 on TS-80 board.

[Position setting of respective switches]

SEL switch·················When performing track shift, set to ON. At OFF position it becomes control of the CCD-V200E side.

PATTERN switch········Set to EV side.

ATF ADJ····················Set to OFF side.

Other switches are not used when adjusting the unit.

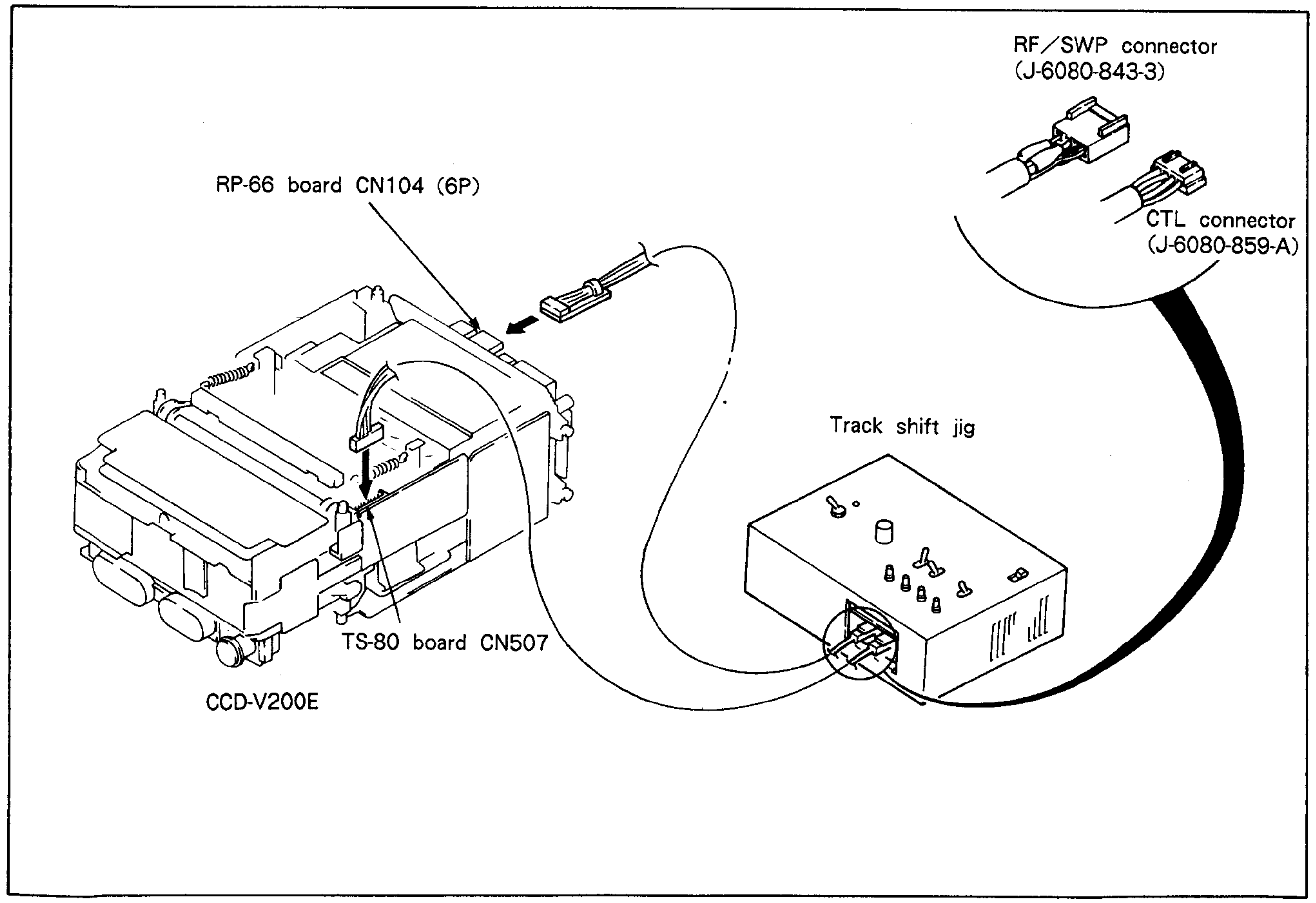
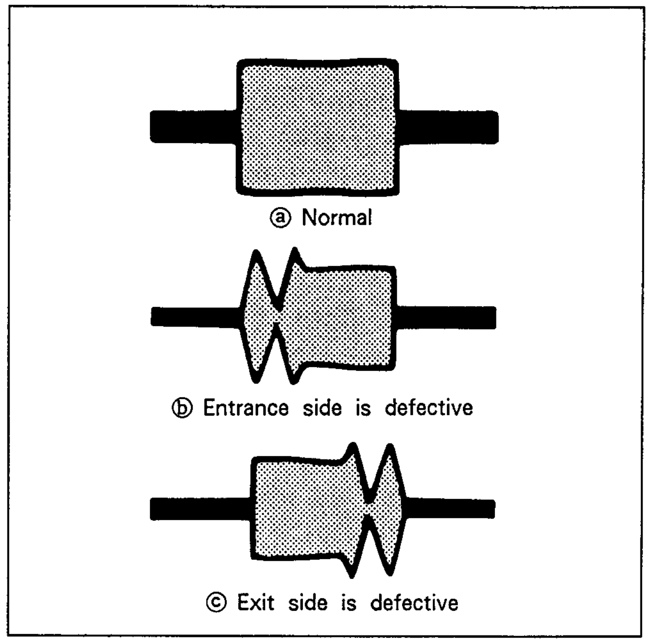


Fig. 8-69. Connection of track shift jig

8-4-2. Preparation for Adjustment

1) Perform cleaning of the tape running surface (the individual tape guides, drum, capstan shaft and pinch roller).
2) Connection of oscilloscope
   1ch : CH2 checking pin of track shift jig
   External trigger : RF SWP checking pin of track shift jig
3) Set the SEL switch of the track shift jig to OFF, then play back the alignment tape (WR5-1C) for tracking, and confirm that the RF waveform of both the entrance and exit sides become flat (Fig. 8-70. ⓐ).
   If the RF waveform of both sides is not flat, the adjustment should be carried out as described below.
   - In case the RF waveform on the entrance side is not flat (Fig. 8-70. ⓑ)
     ········Perform the adjustment according to 8-4-3. Entrance Side Adjustment.
   - In case the RF waveform on the exit side is not flat (Fig. 8-70. ⓒ)
     ········Perform the adjustment according to 8-4-4. Exit Side Adjustment.



ⓐ Normal

ⓑ Entrance side is defective

ⓒ Exit side is defective

Fig. 8-70.

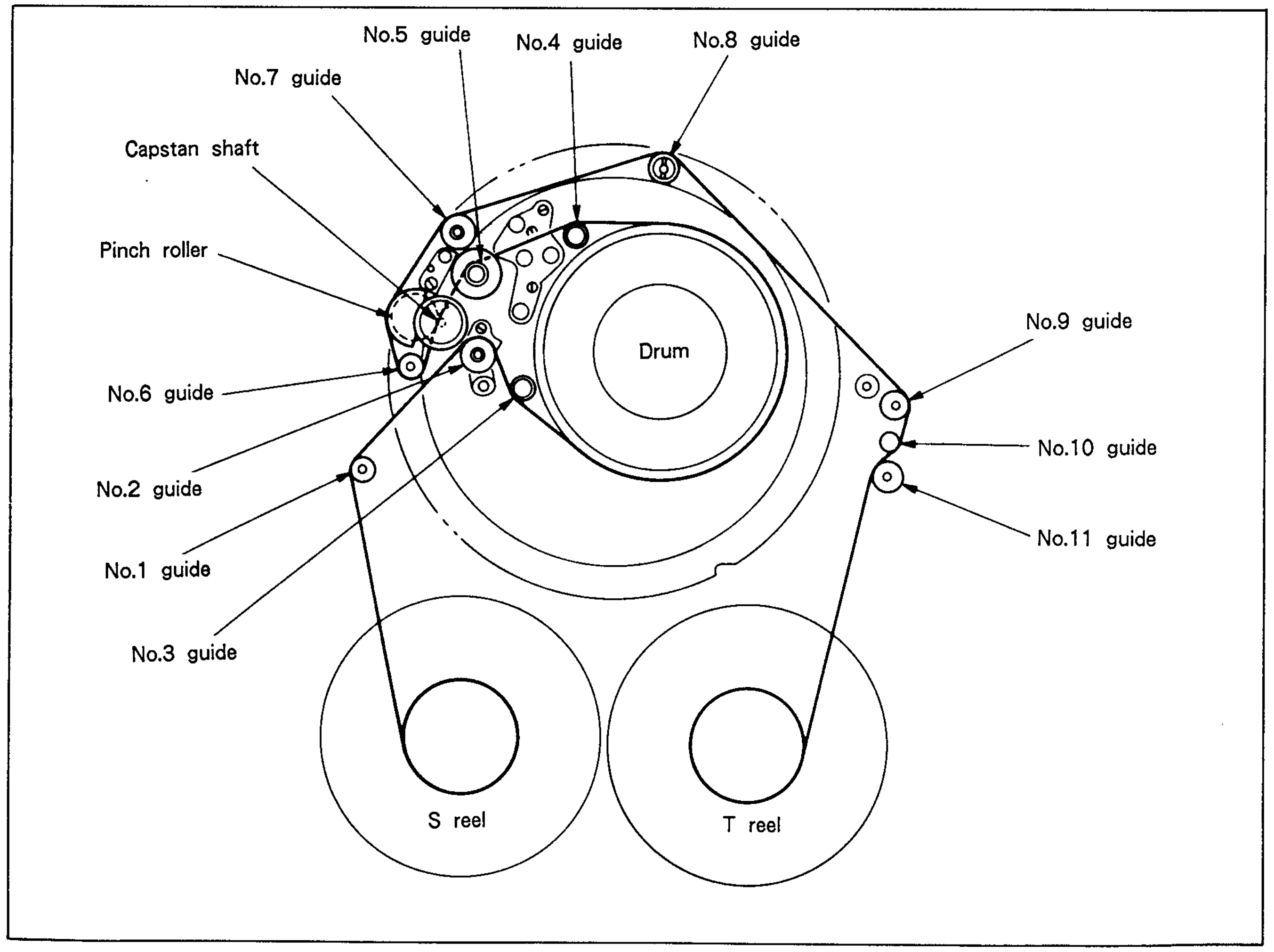


Fig. 8-71. Tape guide arrangement diagram

8-4-3. Entrance Side Adjustment

1) Play back the alignment tape (WR5-1C) for tracking and loosen No.2 guide lock screw ❶, and turn No.2 and No.3 guides counterclockwise to free tape running on the entrance side (See Fig. 8-72.)

   Note : Since the space between the top and bottom flanges of No.2 guide is narrow, confirm that the tape is touching neither top nor bottom flanges at this point. Note that if No.2 guide is loosened too much, the tape touches the bottom flange and the RF waveform on the entrance side exceeds the original free waveform.

2) Confirm that the RF waveform on the entrance side has 0.5 to 3.5 peaks in this condition. If not, adjust as follows. (See Fig. 8-73.)

   <less than 0.5 peak>

   Adjust the No.2 guide zenith screw ❷ by turning it counterclockwise 90° at a time. (See Fig. 8-72.)

   <more than 3.5 peaks>

   Adjust the height adjustment screw of No.1 guide (tension regulator arm assembly) by turning it counterclockwise 90° at a time. (See Fig. 8-74.)

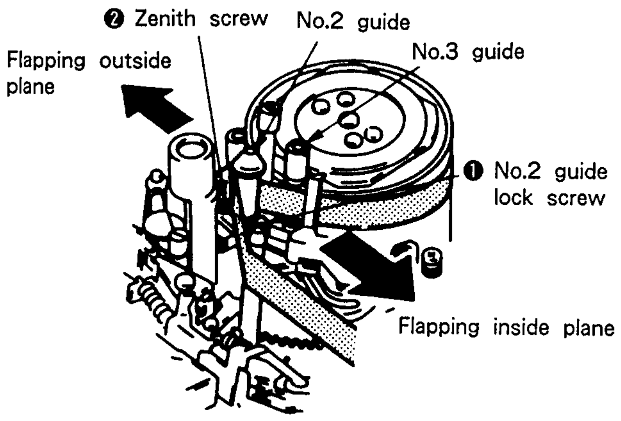

❷ Zenith screw
No.2 guide
Flapping outside plane
No.3 guide
❶ No.2 guide lock screw
Flapping inside plane

Fig. 8-72.

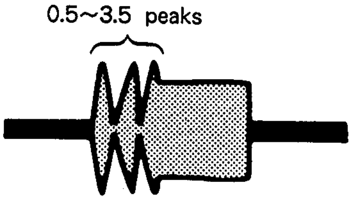


Fig. 8-73.

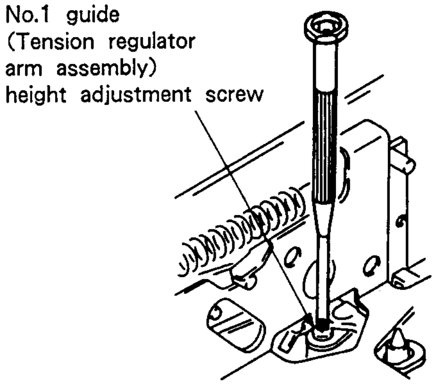

No.1 guide
(Tension regulator
arm assembly)
height adjustment screw

Fig. 8-74.

3) Slowly turn the No.2 guide clockwise to make the entrance side waveform approximately flat. (Fig. 8-75.)

   Note : Do not turn No.2 guide excessively.

4) Set the SEL switch of the track shift jig to ON, then turn the track shift knob until the RF waveform amplitude becomes 2/3. (See Fig. 8-76.)

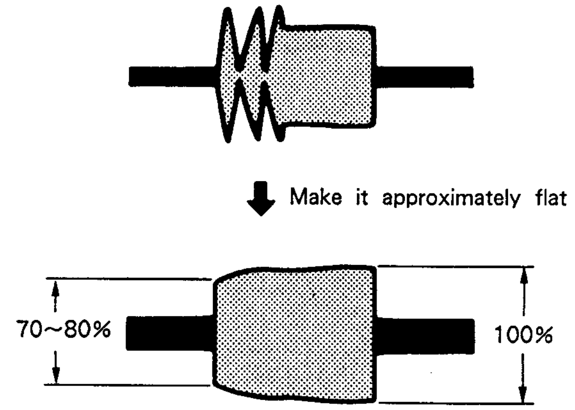

Make it approximately flat
70~80%
100%

Fig. 8-75.

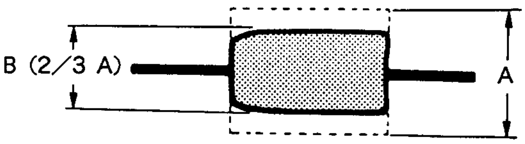


Fig. 8-76.

5) Raise the entrance side waveform slightly by turning No.2 guide. (See Fig. 8-77.)
6) Flatten the waveform with No.3 guide. (See Fig. 8-78.)
7) Tighten No.2 guide lock screw ➊. (See Fig. 8-72.)

Note : Be sure to perform checking in accordance with 8-4-5. Checking After Adjustment after adjustment.

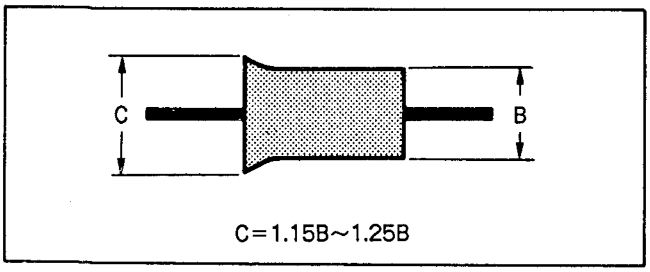

C
B
C=1.15B~1.25B

Fig. 8-77.

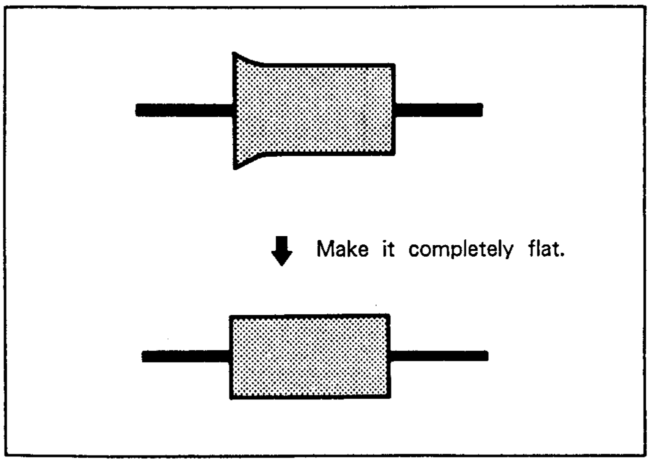

Make it completely flat.

Fig. 8-78.

8-4-4. Exit Side Adjustment

1) Play back the alignment tape (WR5-1C) for tracking and turn No.4 guide and No.5 guide counterclockwise to make the tape running on the exit side free. (See Fig. 8-79.)
   Note : • If the No.5 guide nut does not loosen (it is locked with screw-paint), dissolve the paint with alcohol.
   • Confirm that the tape is not touching the bottom of flanges of No.5 guide during free tape running.
2) Confirm that the RF waveform on the exit side has 1.5 to 3.5 peaks in this condition. If not, readjust as follows. (See Fig. 8-80.)
   〈**If off standard**〉
   i) Turn the lock screw ➊ counterclockwise to loosen.
   ii) Slowly turn the zenith screw ➋ 45° at a time and wait until the RF waveform varies.
   iii) Rotate the lock screw ➊ clockwise to tighten. (See Fig. 8-79.)
   Note : • The waveform varies if the lock screw is tightened too strongly. Tighten moderately.
   • Never turn the azimuth screw of No.5 guide.

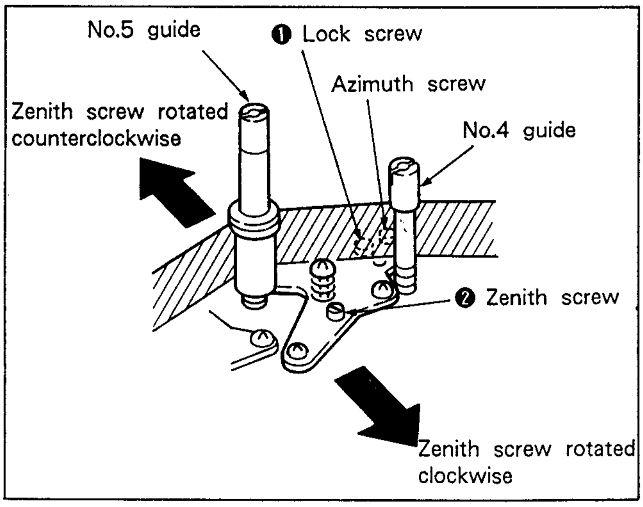

No.5 guide
➊ Lock screw
Azimuth screw
Zenith screw rotated counterclockwise
No.4 guide
➋ Zenith screw
Zenith screw rotated clockwise

Fig. 8-79.

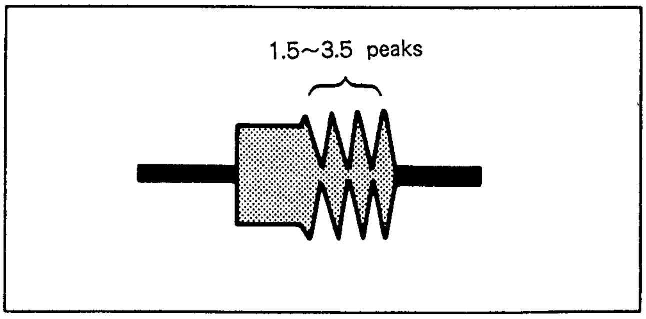


Fig. 8-80.

3) Turn the No.5 guide clockwise to make the RF waveform on the exit side approximately flat. (Fig. 8-81.)

Note :The waveform reaction is slow against nut rotation. Turn the nut after the waveform variations are stabilized.

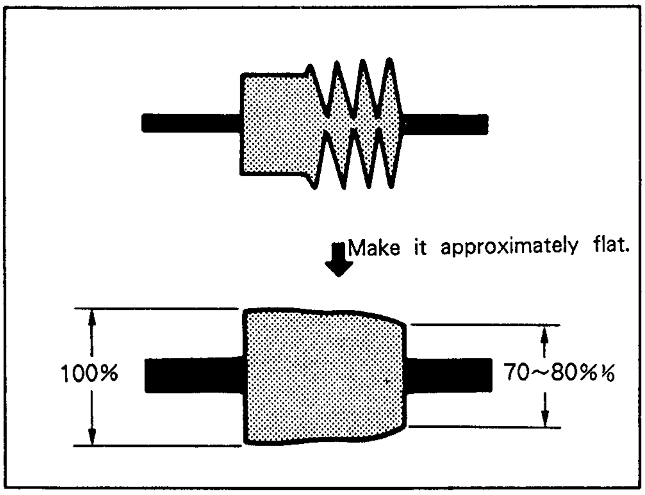

Make it approximately flat.
100%
70~80%%

Fig. 8-81.

4) Set the SEL switch of the track shift jig to ON, then turn the track shift knob until the RF waveform amplitude becomes 2/3. (See Fig. 8-82.)
5) Raise the exit side waveform slightly by turning No.5 guide. (See Fig. 8-83.)
6) Turn No.4 guide so that waveform is flat. (See Fig. 8-84.)

Note : Be sure to perform checking in accordance with 8-4-5. Checking After Adjustment after adjustment.

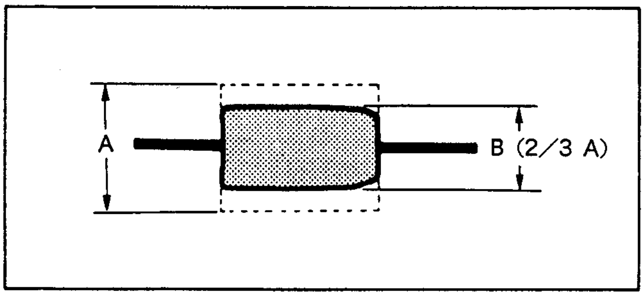


Fig. 8-82.

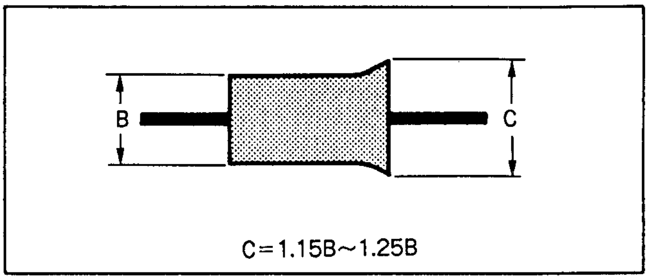

B
C
C=1.15B~1.25B

Fig. 8-83.

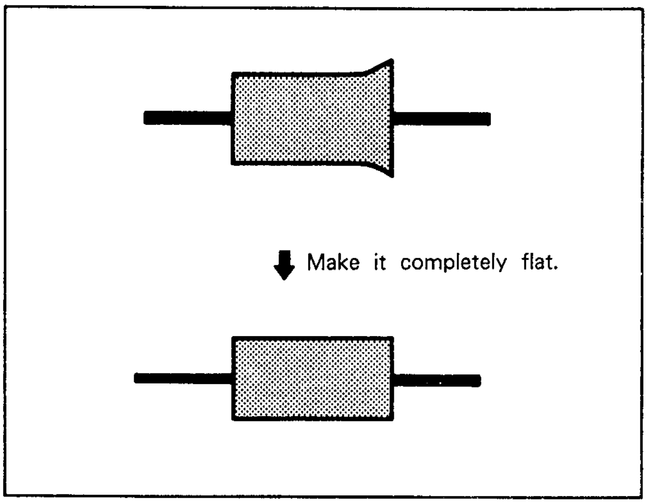

Make it completely flat.

Fig. 8-84.

8-4-5. Checking After Adjustment

1. Tracking check

1) Play back the alignment tape (WR5-1C) for tracking.
2) Set the SEL switch of the track shift jig to ON, and turn the track shift knob until the RF waveform amplitude becomes 2/3. (See Fig. 8-85.)
3) Confirm that the RF waveform amplitude minimum value (EMIN) at this time is more than 80% of maximum value (EMAX). (See Fig. 8-86.)
4) Confirm that the fluctuation amount of both RF waveform entrance and exit sides are as shown in Fig. 8-87.
5) Set the SEL switch of the track shift jig to OFF.
6) Set to the REV mode and confirm that the waveform noise pitches are uniform. If not, adjust as follows. (See Fig. 8-88.)

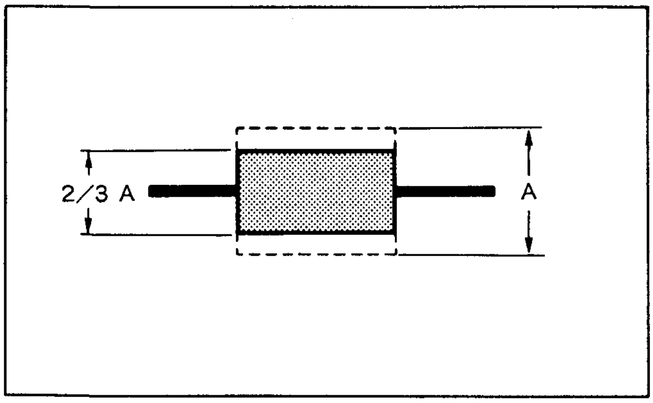
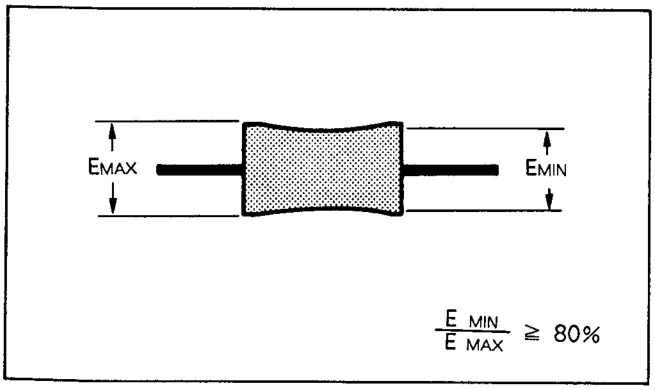
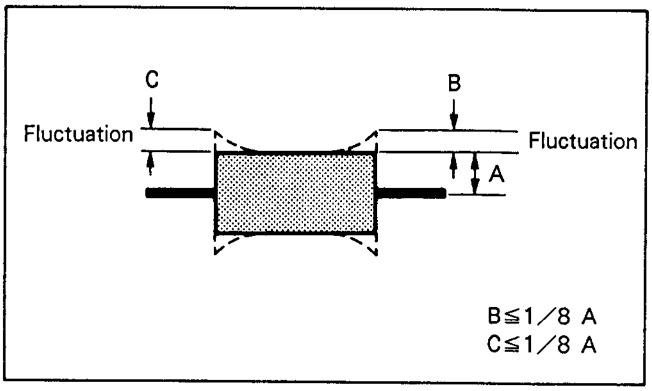


Fig. 8-85.



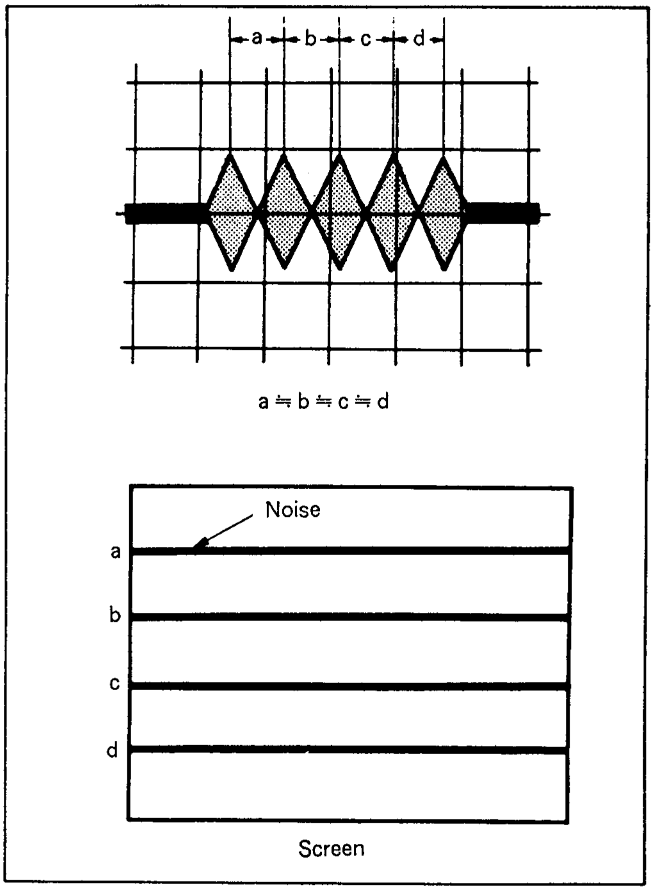
$\frac{E_{MIN}}{E_{MAX}} \geqq 80\%$

Fig. 8-86.



B≦1/8 A
C≦1/8 A

Fig. 8-87.



a ≒ b ≒ c ≒ d

Fig. 8-88.

⟨Narrow noise pitch on entrance side (upper screen)⟩
(See Fig. 8-89.)

Confirm that the RF waveforms are flat in the PLAYBACK mode.

Waveform is not flat :

Perform height adjustment of No.2 guide and No.3 guide according to 8-4-3. Entrance Side Adjustment.

Waveform is flat :

Perform height adjustment of No.1 guide and zenith adjustment of No.2 guide according to 8-4-3. Entrance Side Adjustment.

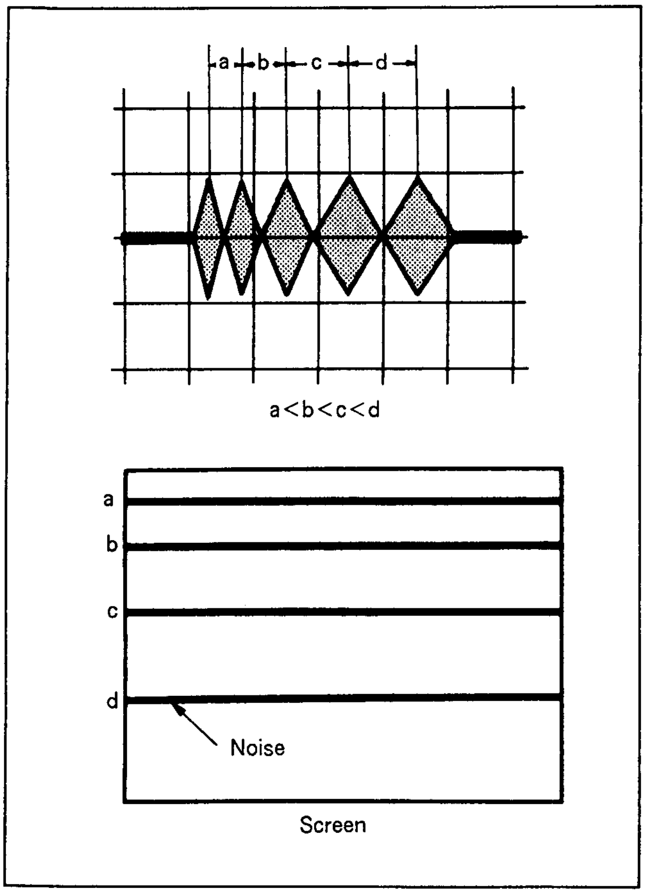


Fig. 8-89.

⟨Narrow noise pitch on exit side (lower screen)⟩
(See Fig. 8-90.)

Set to the PLAYBACK mode and perform height adjustment of No.4 guide and No.5 guide according to 8-4-4. Exit Side Adjustment.

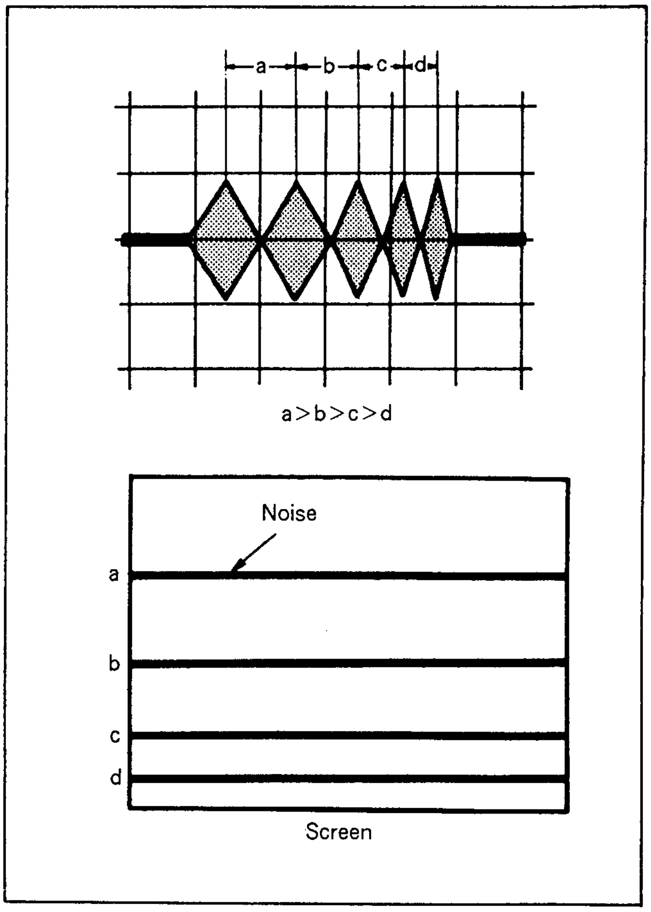


Fig. 8-90.

⟨Wide noise pitch on exit side (lower screen)⟩
(See Fig. 8-91.)
Set to the PLAYBACK mode and confirm that the RF waveform is flat.

Waveform is not flat :
Perform height adjustment of No.4 guide and No.5 guide according to 8-4-4. Exit Side Adjustment.

Waveform is flat :
Turn the guide lower gear counterclockwise with No. 6 guide lock jig (Ref. No. J-11) to loosen, and turn No.6 guide counterclockwise 45° to tighten the lower gear. Confirm the RF waveform of the REV mode again. (See Fig. 8-92.)

Note : If No.6 guide is raised too much, wrinkles may occur in section Ⓐ between the capstan shaft and No.5 guide. Confirm that no wrinkles are occurring. (See Fig. 8-93.)

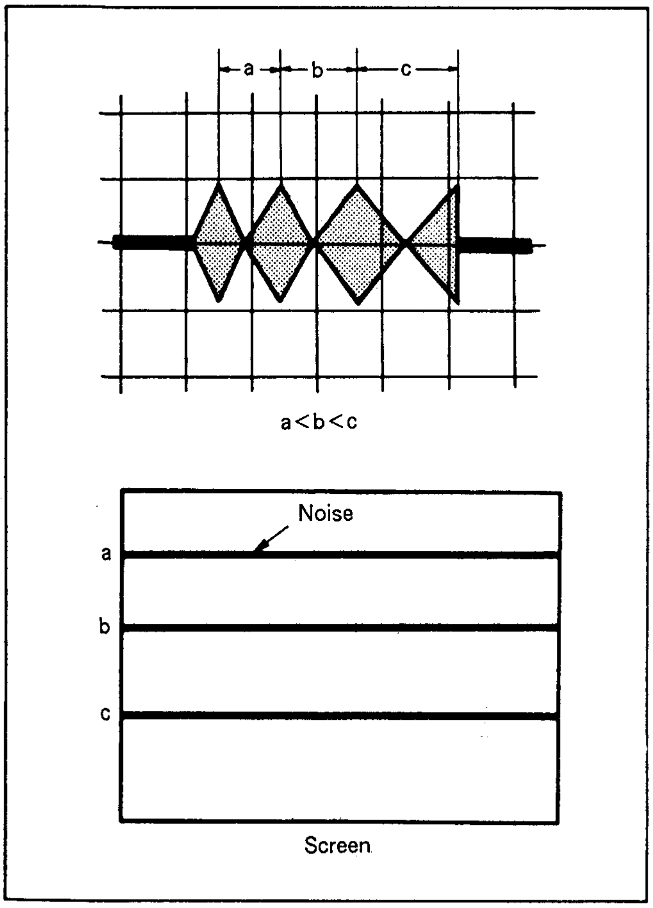

a
b
c
a<b<c
Noise
a
b
c
Screen

Fig. 8-91.

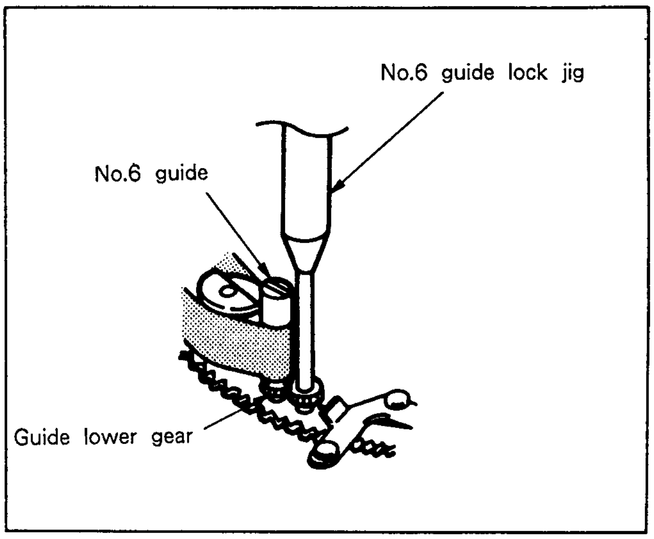

No.6 guide lock jig
No.6 guide
Guide lower gear

Fig. 8-92.

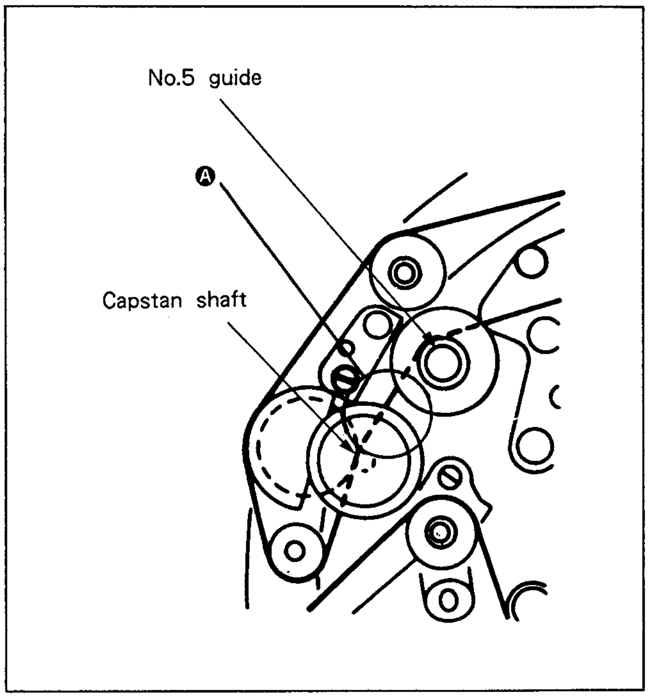

No.5 guide
Ⓐ
Capstan shaft

Fig. 8-93.

2. Checking of rising edge

1) Confirm that the RF waveform rises horizontally during playback after completing loading, after CUE/REV, and during playing back after FF. If not, adjust as follows.

〈In case noise occurs on the exit side (lower screen) at rising of playback after completing loading〉 (See Fig. 8-94.)

Confirm that the FWD back tension is not too low.

If too low :

Readjust according to 8-3-21. FWD Back Tension Adjustment.

If normal :

Turn the azimuth screw of the pinch roller clockwise 5° at a time and adjust while rechecking the rising edge. (See Fig. 8-95.)

〈In case noise occurs on the exit side (lower screen) at rising of playback after REV〉 (See Fig. 8-94.)

Loosen the guide lower gear of No.6 guide using No. 6 guide lock jig, turn No.6 guide 90° counterclockwise to tighten the guide lower gear, then recheck the rising edge.

Note : If No.6 guide is raised too much, wrinkles may occur between the capstan shaft and No. 5 guide (in section Ⓐ of Fig. 8-93.). Confirm that no wrinkles are occurring.

〈In case noise occurs on the exit side (lower screen) at rising of playback after FF〉 (See Fig. 8-94.)

Confirm that the FWD back tension is not too low.

If too low :

Readjust according to 8-3-21. FWD Back Tension Adjustment.

If normal :

Turn the azimuth screw of the pinch roller clockwise approx. 5° at a time and adjust while rechecking the rising edge. (See Fig. 8-95.)

Note : After finishing adjustment, be sure to check rising of playback following to completion of loading.

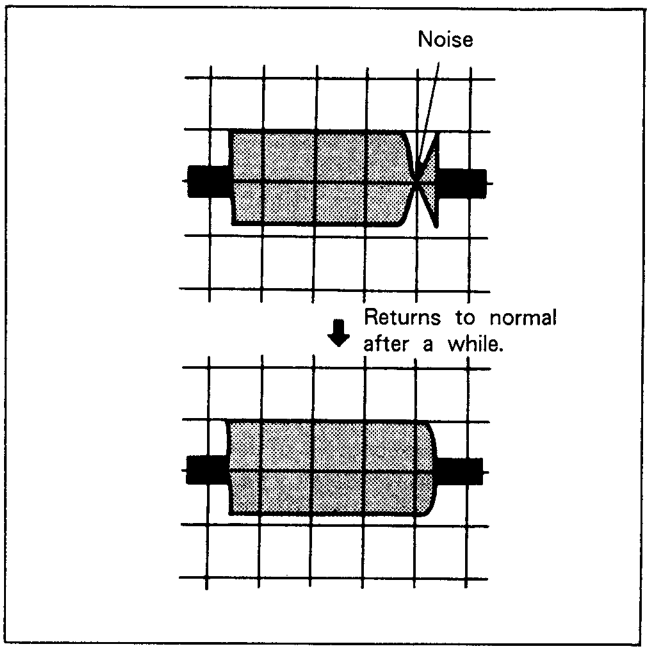

Noise
Returns to normal after a while.

Fig. 8-94.

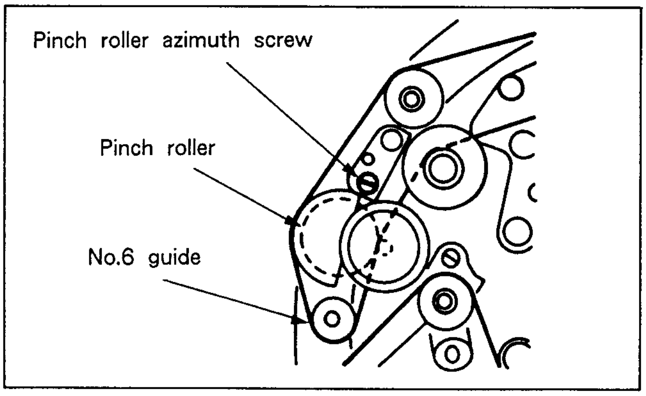

Pinch roller azimuth screw
Pinch roller
No.6 guide

Fig. 8-95.

3. Tape running check

In PLAYBACK and REV modes, confirm the following for the flange sections (arrows in Fig. 8-96.) of guides No.1 to No.6 : there should be no gaps and the tape should not be curled more than 0.3 mm at tape guides No.1, No.2 and No.5, and there should be neither gaps nor curls at guides No.3, No.4 and No.6.

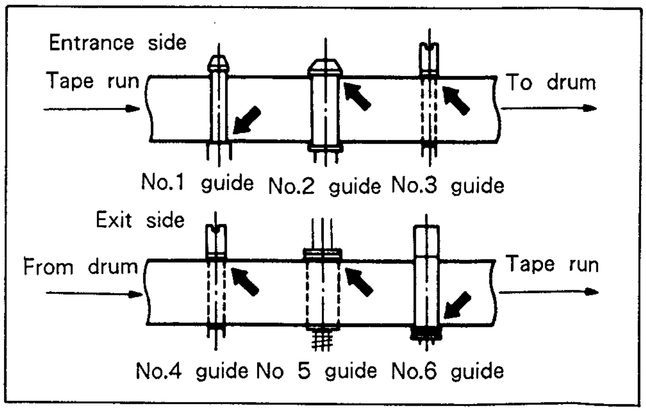

Entrance side
Tape run
To drum
No.1 guide
No.2 guide
No.3 guide
Exit side
From drum
Tape run
No.4 guide
No 5 guide
No.6 guide

Fig. 8-96.

SECTION 9
VIDEO SECTION ADJUSTMENTS

During these adjustments, see the parts arrangement diagram relevant to the adjustment on page 354.

For the adjustment of the VTR block, use the following measuring instruments.

[Instruments to be used]

1) Monitor TV
2) AC pack
3) Dual trace oscilloscope of over 10 MHz band which incorporates delay mode (Unless otherwise specified, use 10 : 1 probe.)
4) Frequency counter
5) Pattern generator incorporates video output terminal
6) Digital voltmeter
7) Audio generator
8) Audio level meter
9) Audio distortion meter
10) Audio attenuator
11) Regulated-DC power supply
12) Alignment tape
    Tracking Adjustment (WR5-1C)
        Parts Code : 8-967-995-06
    Video frequency characteristics adjustment (WR5-2C)
        Parts Code : 8-967-995-16
    Operation check (WR5-3CL)
        Parts Code : 8-967-995-36
    Operation check (WR5-3CSP)
        Parts Code : 8-967-995-27

[Precautions on Adjustment]

Adjustment of the video section is made with the camera and EVF sections removed, with the exception of "Battery down adjustment" which is part of system control system adjustment. Remove the following six connectors when removing the camera and EVF sections.

1. SS-83 board CN303 (3P, white)
2. SS-83 board CN308 (7P, white)
3. PC-32 board CN008 (2P, red)
4. EM-2 board CN407 (4P, white)
5. CC-13 board CN901 (2P, yellow)
6. CC-13 board CN906 (3P, white)

When the following parts get in the way, remove the respective connectors to allow easy adjustment. (The level meter is only needed for level meter adjustment.)

1. Stereo microphone unit
   →PC-32 board CN003 (4P, white)
2. AUDIO DUB switch board (DL-22 board)
   →PC-32 board CN013 (3P, white)
3. Headphone VR
   →PC-32 board CN006 (3P, yellow)
4. Narration microphone unit
   →AU-48 board CN402 (2P, white)
5. Narration microphone switch board (MS-11 board)
   →AU-48 board CN401 (2P, red)
6. Level meter (ME-5 board)
   →PC-32 board CN031 (4P, yellow)

When adjusting the video system (VI-48 board) and performing "Motor Power Voltage Adjustment" and "ATF BPF Balance Adjustment" of the servo system, it is necessary to open the VI-48, AU-48, and RP-66 boards. For this, the PC-32 board (PCM audio board) is removed and adjustment is performed. At this time, the following six connectors must at least be removed. (However, the PC-32 board must be connected for "AFM Recording Current Adjustment" and "PCM Recording Current Adjustment".)

1. PC-32 board CN001 (9P, flexible board)
2. PC-32 board CN002 (14P, flexible board)
3. PC-32 board CN004 (7P, white)
4. PC-32 board CN007 (2P, white)
5. PC-32 board CN012 (6P, yellow)
6. PC-32 board CN030 (2P, black)

Note : GND on the AU-48 board will be disconnected when the PC-32 board is removed.
Therefore, connect the following places using jumper wires.

1. Pin ⑦ of W402 on AU-48 board
   —— TP101 on RP-66 board.

[Connection of instruments]

Unless otherwise specified, perform the adjustment by connecting the measuring instruments as shown in figure below.

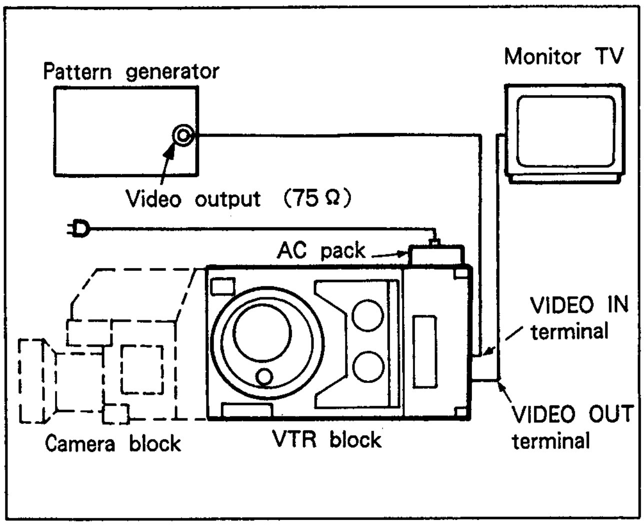

Pattern generator
Monitor TV
Video output (75 Ω)
AC pack
VIDEO IN terminal
VIDEO OUT terminal
Camera block
VTR block

Fig. 9-1.

[Set-up during adjustment]

Since the video output signal obtained from the pattern generator is used as the adjusting signal of the VTR block adjustment, it is necessary that this video output signal has to be within the specification. Connect an oscilloscope to J061 (VIDEO IN) on the PJ-19 board and make sure that the amplitude of the video SYNC signal is approx. 0.3V, that the video block is approx. 0.7V, that the burst signal is 0.3V with flat characteristics, and the signal level ratio between the burst signal and "Red" signal is 0.30 : 0.66.

The video signal (colour bar) used in the VTR block adjustment is an shown in Fig. 9-2.

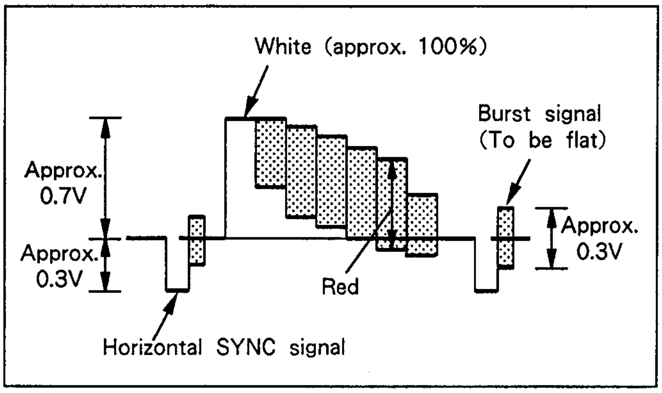
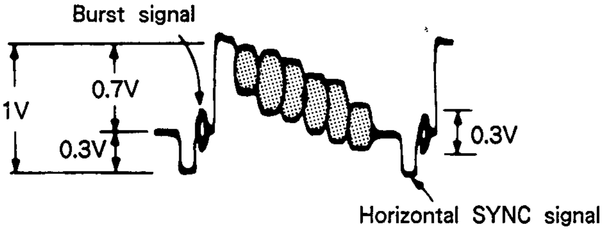
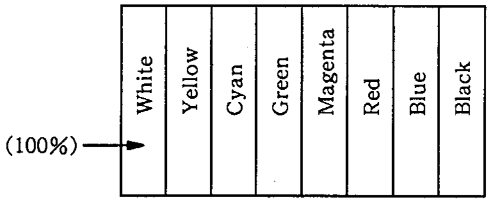

White (approx. 100%)
Burst signal (To be flat)
Approx. 0.7V
Approx. 0.3V
Approx. 0.3V
Red
Horizontal SYNC signal

Fig. 9-2. Colour bar signal of pattern generator

[**Alignment tape**]

Tape	Content	Use
Tracking (WR5-1C)	1. Recording area : PCM−video 2. Recording content : CH2 : 1MHz linearity adjustment signal (CH1 : 9MHz)	Drum linearity adjustment
Video Frequency Characteristics (WR5-2C)	1. Recording area : Video 2. Recording content : RF sweep 0 to 10MHz 3. Maker : 1, 3.58, 5.5 and 7MHz	Frequency characteristics adjustment
Operation Check SP mode (WR5-3CSP) LP mode (WR5-3CL) Note : PCM area is not included in WR5-3CL	1. Recording area : Video 2. Recording content : ■ Video track • Video signals Colour bars 10sec, Monoscope 8sec } Iterative (Colour bars)  Burst signal 1V 0.7V 0.3V 0.3V Horizontal SYNC signal  White Yellow Cyan Green Magenta Red Blue Black (100%) • Audio signals (AFM) 400Hz 60% modulation ■ PCM area (WR5-3CSP only) • Audio signals (PCM) 1kHz 10sec 20Hz 2sec 400Hz 4sec 14kHz 2sec } Iterative	Operation check

[**I/O level and impedance**]

Video input Pin jack

Input signal : 1 Vp-p, 75 Ω unbalance, negative SYNC

Video output Pin jack

Output signal : 1 Vp-p, 75 Ω unbalance, negative SYNC

Audio input Pin jack

Input level : −10 dBs (0 dBs=0.775 Vrms)

Input impedance : Over 47 kΩ

Audio output Pin jack

Specified output : −10 dBs with 47 kΩ load

Loading impedance : Over 10 kΩ

9-1. POWER SUPPLY CHECK

9-1-1. REG 5V Check (VI-48 Board)

Mode	Stop
Measurement Point	Positive probe : Pin ⑤ of DR201 (AUDIO 5V) Pin ⑦ of DR201 (VIDEO 5V) Pin ⑥ of DR201 (S/S 5V) Negative probe : GND
Measuring Instrument	Digital voltmeter
Specified Value	5.0±0.15 Vdc

Checking method :

1) It should be 5.0±0.15 Vdc.

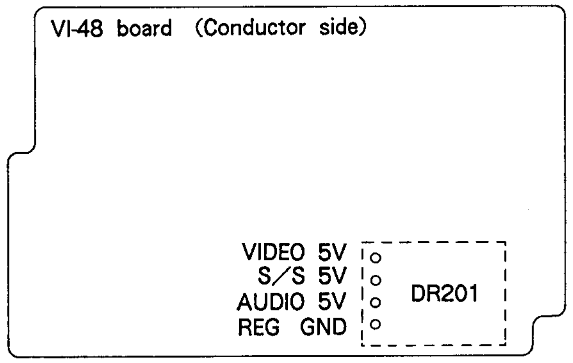


Fig. 9-3.

9-2. SYSTEM CONTROL ADJUSTMENT

9-2-1. Battery Down Adjustment (TS-80 and SK-22 Boards)

Mode	Camera mode REC
Subject	Arbitrary
Measurement Point	TP451 on TS-80 board ($\overline{\text{BATT DOWN}}$)
Measuring Instrument	Oscilloscope (DC range)
Adjusting Element	RV458 on TS-80 board
Specified Value	5.73±0.01 Vdc

Connection :

1) Remove the AC pack from the battery compatment.
2) Remove CN431 on the FU-62 board and connect the regulated-DC power supply and digital voltmeter as shown in Fig. below.

Note : Be sure to perform the adjustment by connecting the camera block.

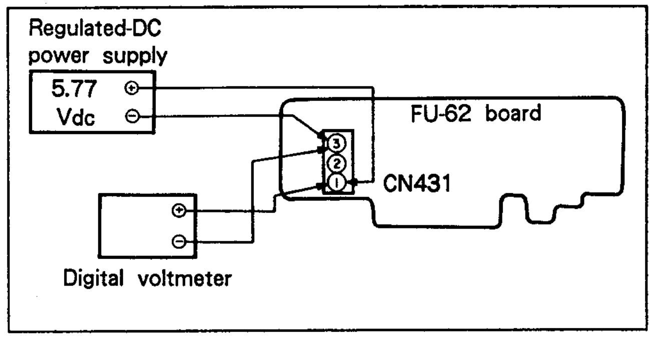


Fig. 9-4.

Adjusting method :

1) Connect TP301 ($\overline{\text{TEST}}$) on the SK-22 board and GND with a jumper and set to test mode.
2) Adjust the output voltage of the regulated-DC power supply so that the indication of the digital voltmeter becomes 5.73±0.01 Vdc. (VTR is in REC mode)
3) Turn slowly RV458 on the TS-80 board and set the DC level of TP451 on the TS-80 board to the point where it is about to turn "L" from "H".
4) Remove the jumper.

Checking method :

Perform the following checks and if the results are not satisfied, repeat the checks again.

1) Adjust the output voltage of the regulated-DC power supply so that the indication of the digital voltmeter becomes 5.90±0.01 Vdc. (VTR is in REC mode)
2) Make sure that the 🪫 mark of the LCD does not light on and the TALLY lamp does not flicker.
3) Decrease the output voltage of the regulated-DC power supply so that the indication of the digital voltmeter becomes 5.80±0.01 Vdc.
4) Make sure that the 🪫 mark of the LCD and the TALLY lamp flicker every other second.
5) Decrease the output voltage of the regulated-DC power supply so that the indication of the digital voltmeter becomes 5.71±0.01 Vdc.
6) Make sure that the VTR is stopped and the power supply is turned OFF.

9-3. SERVO SYSTEM ADJUSTMENT

9-3-1. MOTOR POWER Voltage Adjustment (SS-83 Board)

Mode	Stop
Measurement Point	Pin ⑮ of CN307
Measuring Instrument	Digital voltmeter
Adjusting Element	RV151
Specified Value	5.30±0.05 Vdc

Adjusting method :

1) Adjust with RV151 so that it becomes 5.30±0.05 Vdc.

9-3-2. Drum Free Speed Adjustment (TS-80 Board)

Mode	REC
Signal	Arbitrary
Measurement Point	Pin ① (ADE) of CN507
Measuring Instrument	Digital voltmeter
Adjusting Element	RV451
Specified Value	2.3±0.1 Vdc

Adjusting method :

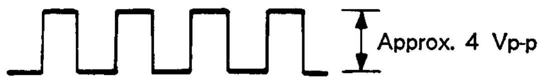
1) Adjust with RV451 so that it becomes 2.3±0.1 Vdc.

9-3-3. Capstan Free Speed Adjustment (TS-80 Board)

Mode	Playback
Signal	Arbitrary tape
Measurement Point	Pin ⑥ (CFG) of CN507
Measuring Instrument	Frequency counter
Adjusting Element	SP mode : RV452 LP mode : RV453
Specified Value	SP mode : 1341±2 Hz LP mode : 671±1 Hz

Connection :
1) Connect Pin ⑯ (SL CHECK) and GND on the RP-59 board on the RP-66 board with an electrolytic capacitor. (GND is on the negative side of the capacitor.)
2) Connect Pin ③ (ATF LOCK) and GND of CN507 on the TS-80 board with a jumper.

Adjusting method :
The adjusting element of LP mode is shown in parentheses [ ].
1) Set the SP/LP switch (S309 on the SK-22 board) to the position of the SP [LP].
2) Turn "VTR POWER" from OFF to ON.
3) Adjust with RV452 [RV453] so that it becomes 1341±2 Hz [671±1 Hz] in the playback mode.



1341±2 Hz (SP mode)
671±1 Hz (LP mode)

Fig. 9-5. Capstan free speed adjustment

9-3-4. Switching Position Adjustment (TS-80 Board)

Mode	Playback
Signal	Alignment tape : For operation check (WR5-3CSP)
Measurement Point	CH1 : TP208 on VI-48 board (Pin ① of CN204 (VIDEO OUT)) CH2 : Pin ② of CN104 (RF SWP) on RP-66 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV456
Specified Value	6.5±0.3H (416±20 µsec)

Adjusting method :
1) Adjust with RV456 so that it becomes 6.5±0.3H (416±20 µsec).

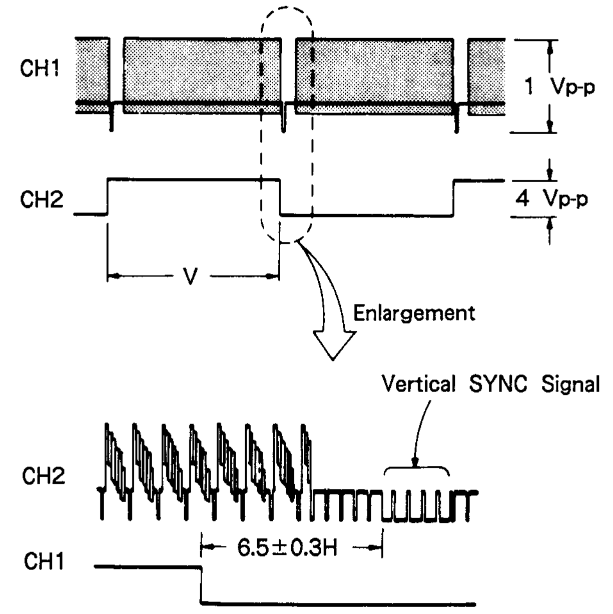


Fig. 9-6. Switing position adjustment

9-3-5. ATF BPF Balance Adjustment (SS-83 Board)

Mode	Playback pause
Signal	Self-recorded tape
Measurement Point	Pins ⑦ and ⑥ of IC162
Measuring Instrument	Oscilloscope
Adjusting Element	RV152
Specified Value	Be sure that the 16 kHz signal level (Pin ⑥ of IC162) is equivalent to the 47 kHz signal level (Pin ⑦ of IC162)

Adjusting method :
1) Play back the self-recorded tape and set to playback pause mode.
2) Connect an oscilloscope to Pin ⑦ of IC162 and read the 47 kHz signal level. (Approx. 2 Vp-p)
3) Connect an oscilloscope to Pin ⑥ of IC162.
4) Adjust with RV152 so that the 16 kHz signal level becomes equivalent to the 47 kHz signal level.

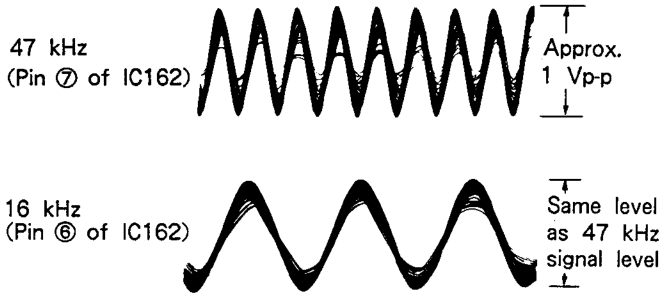


Fig. 9-7. ATF BPF balance adjustment

9-3-6. Playback Pause Adjustment (CC-13 Board)

Mode	Playback pause
Signal	Self-recorded tape of colour bar signals (SP mode)
Measurement Point	CH1 : Pin ② of CN104 on RP-66 board (RF SWP) CH2 : Pin ① of CN104 on RP-66 board (RF OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV901 (FRAME ADJ)
Specified Value	Minimum noise on monitor screen

Adjusting method :
1) Select the playback mode and set to the playback pause mode after the playback picture stabilizes.
2) Confirm that the RF OUT waveform (CH2 waveform).
3) Rotate the FRAME ADJ knob (RV901 on CC-13 board) and repeat steps 1) and 2) until the peaks of the RF OUT waveform (CH2 waveform) are near the center of the H period and L period of the RF SWP waveform (CH1 waveform), and so that the levels at the entrance and exit of fields A and B of the RF OUT waveform are equivalent and at maximum level.
4) Repeat steps 1) and 2) at least five times and confirm that no noise appears on the monitor screen.

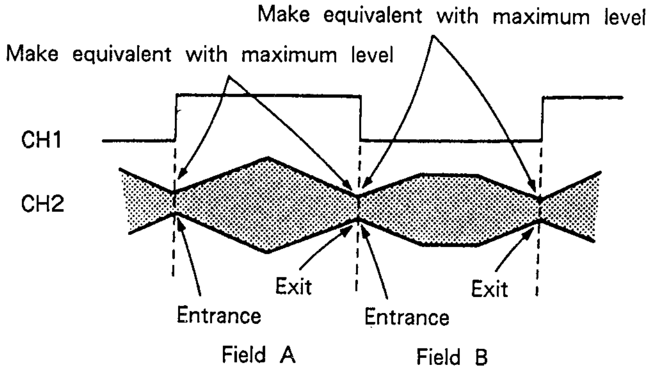

Make equivalent with maximum level
Make equivalent with maximum level
CH1
CH2
Exit
Exit
Entrance
Entrance
Field A
Field B

Fig. 9-8. Playback pause adjustment

9-3-7. Slow Tracking Adjustment (TS-80 board)

Mode	1/30 slow playback
Signal	Self-recorded tape of colour bar signals (SP mode)
Measurement Point	CH1 : Pin ② of CN104 on RP-66 board (RF SWP) CH2 : Pin ① of CN104on RP-66 board (RF OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV455 (SP mode) RV454 (LP mode)
Specified Value	Minimum noise on monitor screen

Preparations :
1) Perform "Playback Pause Adjustment".

Adjusting method :
Adjustment element of LP mode is shown parentheses [ ].
1) Select the playback mode and change to the playback pause mode after the playback picture stabilizes.
2) Hold down the FRAME button to select the 1/30 slow playback mode.
3) Adjust RV455 [RV454] until the peaks of the RF OUT waveform (CH2 waveform) are near the center of the H period and L period of the RF SWP waveform (CH1 waveform), and so that the levels at the entrance and exit of fields A and B of the RF OUT waveform are equivalent and at maximum level. (Refer to Fig. 9-8.)
Also confirm that there is minimum noise on the monitor screen.

9-3-8. Frame Feed Adjustment (TS-80 Board)

Mode	Frame feed (FRAME)
Signal	Self-recorded tape of colour bar signals
Measurement Point	CH1 : Pin ② of CN104 on RP-66 board (RF SWP) CH2 : Pin ① of CN104 on RP-66 board (RF OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV459
Specified Value	Minimum noise on monitor screen

Preparations :
1) Perform "Playback Pause Adjustment".

Adjusting method :
1) Select the playback mode and change to the playback pause mode after the playback picture stabilizes.
2) Perform frame feed once and confirm that the peaks of the CH2 waveform are near the center of the H period and L period of the CH1 waveform, and that the output at the entrance and exit of fields A and B is equivalent and at maximum level. (Refer to Fig. 9-8.)
Also check the amount of noise on the monitor screen.
3) Perform further frame feeding and confirm that the entrance and exit output of the RF waveform of CH2 is equivalent and maximum for each frame feed.
Also check the amount of noise on the monitor screen.
4) Rotate RV459 and set to the position which provides minimum noise on the monitor screen when steps 1) through 3) are repeated.
(At this time, rotate RV459 fully in the counterclockwise direction and repeat adjustment while gradually returning in the clockwise direction. As there is no single minimum noise position, set RV459 to the first minimum noise point.)

9-3-9. JOG VD Adjustment (CC-13 Board)

Mode	Playback pause
Signal	Self-recorded tape with cross hatch signals, etc.
Measurement Point	Confirm on monitor TV screen
Measuring Instrument	
Adjusting Element	RV902 (STILL ADJ)
Specified Value	Minimum vertical jitter in the center of the screen.

Adjusting method :

1) Select the playback mode and change to the playback pause mode after the playback picture stabilizes.
2) Adjust the STILL ADJ knob (RV902 on CC-13 board) for minimum vertical jitter in the center of the screen.

9-4. VIDEO BLOCK ADJUSTMENT

The adjustment of the video system should in principle be followed the undermentioned adjustment procedure.

The colour video signal supplied from the pattern generator is utilized as the video input signal of the video system adjustment in recording mode. Make sure to check that the SYNC signal and colour burst signal are matched with those in the set-up of during the adjustment of as shown in Fig. 9-2.

[**Adjusting procedure**]

1) Playback frequency characteristics adjustment
2) Flying erase check
3) Crystal oscillator fo adjustment
4) Croma comb type filter adjustment
5) Y comb type filter adjustment
6) SYNC AGC adjustment
7) VIDEO OUT level adjustment
8) PB Y level adjustment
9) Y FM carrier frequency adjustment
10) Y FM deviation adjustment
11) AC clip adjustment
12) 375fH VCO adjustment
13) Chroma emphasis fo adjustment
14) Carrier balance adjustment
15) GCA adjustment
16) fH VCO adjustment
17) REC Y recording current adjustment
18) REC C recording current adjustment
19) REC AFM recording current adjustment
20) REC ATF recording level check
21) REC PCM recording current adjustment

9-4-1. Playback Frequency Characteristics Adjustment (RP-59/RP-66 Boards)

1. CH1 and CH2 adjustment

The adjusting element of CH2 is shown in parentheses [ ].

Mode	Playback
Signal	Alignment tape : For frequency characteristics adjustment (WR5-2C)
Measurement Point	Pin ③ [Pin ④] of CN104 on RP-66 board External trigger : Pin ② of CN104 Trigger slope : + [−]
Measuring Instrument	Oscilloscope
Adjusting Element	RV003 [RV004] on RP-59 board
Specified Value	From 3.58 MHz to 7 MHz is almost a straight line.

Adjusting method :

1) Adjust with RV003 [RV004] on the RP-59 board so that peak appears in the envelope of the RF waveform. (See Fig. 9-9. b))
2) Adjust with RV003 [RV004] on the RP-59 board so that the peak of the RF waveform envelope becomes small and the waveform from 3.58 MHz to 7 MHz section becomes almost a straight line. (See Fig. 9-9. c))
   At this point, be sure to confirm that the level difference ratio between 3.58 MHz and 5.5 MHz is approximately 4 : 3 [4 : 3].
3) Perform self recording and be sure to confirm that there are no occurrence of black noise and white noise due to over modulation.

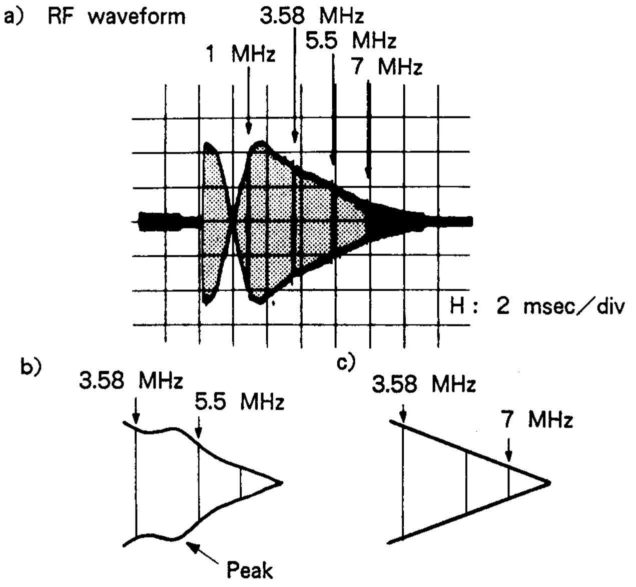


Fig. 9-9. CH1 and CH2 adjustment

2. CH1' adjustment

Mode	Playback pause
Signal	Alignment tape : For frequency characteristics adjustment (WR5-2C)
Measurement Point	Pin ⑤ of CN104 on RP-66 board External trigger : Pin ② of CN104 on RP-66 board Trigger slope : −
Measuring Instrument	Oscilloscope
Adjusting Element	RV101 on RP-66 board
Specified Value	3.58 MHz level : 5.5 MHz level =4 : 3

Adjusting method :

1) Adjust RV101 on the RP-66 board so that the ratio of 3.58 MHz level to 5.5 MHz level is 4 : 3.

9-4-2. Flying Erase Check (RP-66 Board)

Mode	REC
Signal	Arbitrary
Measurement Point	TP102 (FE CHECK)
Measuring Instrument	Oscilloscope and frequency counter
Specified Value	Frequency : Over 7.5 MHz Voltage : Over 7.5 Vp-p

Note : Be sure to use MP type tape (Pin ⑤ of W202 should be "L").

Checking method :

1) Make sure that the oscillation frequency is over 7.5 MHz and the oscillation voltage is over 7.5 Vp-p.

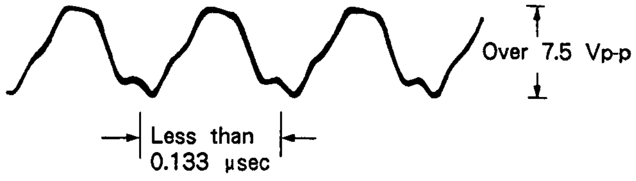


Fig. 9-10. Flying erase check

9-4-3. Crystal Oscillator fo Adjustment (VC-11/VI-48 Boards)

Mode	Playback
Signal	Alignment tape : For operation check (WR5-3CSP)
Measurement Point	Pin (55) on VC-11 board
Measuring Instrument	Frequency counter
Adjusting Element	CV001 on VC-11 board
Specified Value	4433619±50 Hz

Note : Connect the frequency counter through a buffer of high impedance (approx. 10 MΩ) and low capacitance (less than 10 pF).

Adjusting method :

1) Adjust with CV001 on the VC-11 board so that it becomes 4433619±50 Hz.

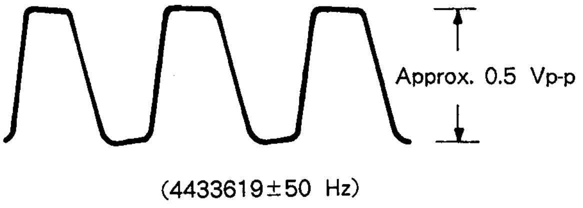


Fig. 9-11. Crystal osillator fo adjustment

9-4-4. Chroma Comb Filter Adjustment (VD-6/VI-48 Boards)

Mode	E-E
Signal	Colour bar
Measurement Point	Pin ⑳ on VD-6 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV002 on VD-6 board and LV201 on VI-48 board
Specified Value	Minimum residual chroma component

Connection :

1) Connect base of Q243 to GND with a jumper wire.

Adjusting method :

1) Adjust with RV002 on the VD-6 board and LV201 on the VI-48 board alternately so that the residual chroma component becomes minimum.

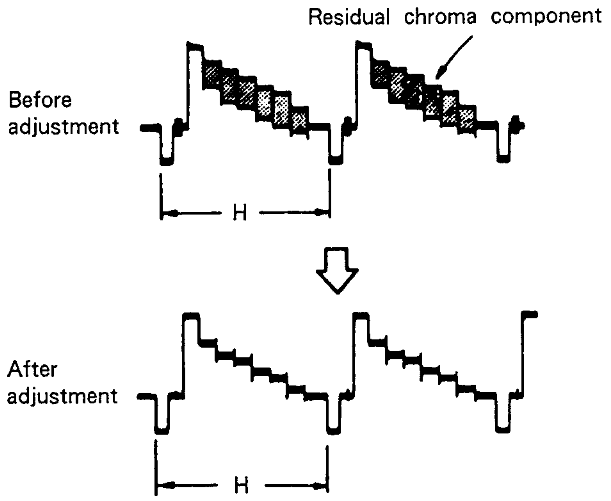


Fig. 9-12. Chroma comb filter adjustment

9-4-5. Y Comb Type Filter Adjustment (VD-6/VI-48 Boards)

Mode	E-E
Signal	Colour bar
Measurement Point	Pin ⑩ on VD-6 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV203 on VI-48 board
Specified Value	The amplitude between the yellow level center and the pedestal is 50±25 mVp-p.

Note : Be sure to connect a 22 kΩ of resistor in series between Pin ⑩ on the VD-6 board and 10 : 1 probe.

Adjusting method :

1) Adjust with RV203 on the VI-48 board so that the amplitude between the yellow level center and pedestal becomes 50±25 mVp-p.
2) While playing back a tape in which dropouts are recorded, be sure to comfirm that these dropouts are not discernible.
   In the event the dropouts become discernible, adjust with RV203 so that they become undiscernible.

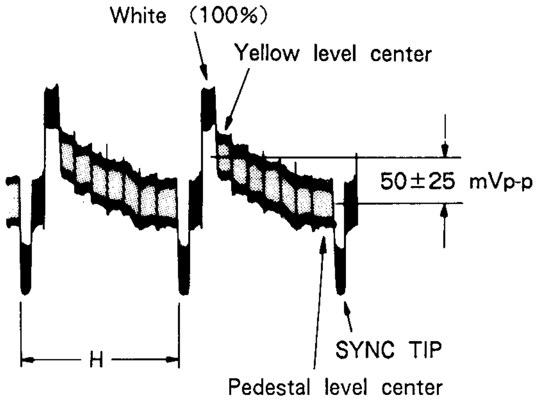


Fig. 9-13.

9-4-6. SYNC AGC Adjustment (VY-9/VI-48 Boards)

Mode	E-E
Signal	Colour bar
Measurement Point	Pin ㊿ on VY-9 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV006 on VY-9 board
Specified Value	0.50±0.01 Vp-p

Adjusting method :

1) Adjust with RV006 on VY-9 board so that it becomes 0.50±0.01 Vp-p.

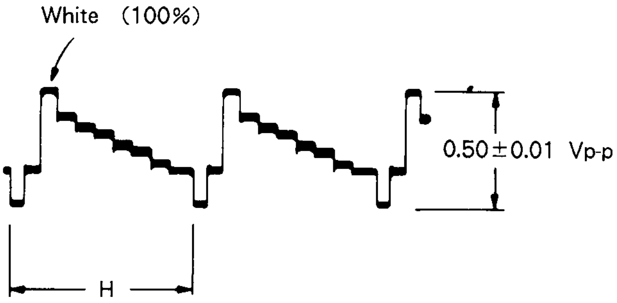


Fig. 9-14. SYNC AGC adjustment

9-4-7. VIDEO OUT Level Adjustment (VY-9/VI-48 Boards)

Mode	E-E
Signal	Colour bar
Measurement Point	TP208 on VI-48 board (Pin ① of CN204 (VIDEO OUT))
Measuring Instrument	Oscilloscope
Adjusting Element	RV005 on VY-9 board
Specified Value	$1.00 {}^{+0.025}_{-0.05}$ Vp-p

Note : Be sure that the VIDEO OUT terminal (J381 on the SC-9 board) is terminated by 75Ω.

Adjusting method :

1) Adjust with RV005 on the VY-9 board so that it becomes $1.00 {}^{+0.025}_{-0.05}$ Vp-p.

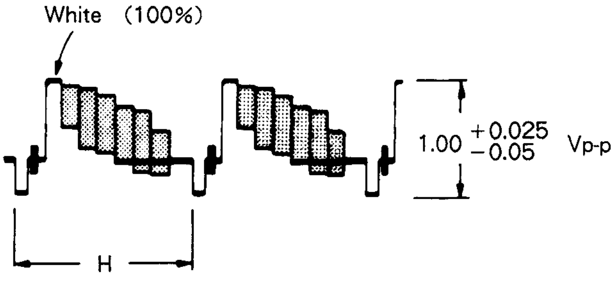


Fig. 9-15. VIDEO OUT level adjustment

9-4-8. PB Y Level Adjustment (VY-9/VI-48 Boards)

Mode	Playback
Signal	Alignment tape : For operation check (WR5-3CSP) Colour bar section
Measurement Point	TP208 on VI-48 board (Pin ① of CN204 (VIDEO OUT))
Measuring Instrument	Oscilloscope
Adjusting Element	RV001 on VY-9 board
Specified Value	1.00±0.05 Vp-p

Note :
1) Be sure that the VIDEO OUT terminal (J381 on the SC-9 board) is terminated by 75 Ω.
2) Be sure that the EDIT switch (S310 on the SK-22 board) is turned OFF.

Adjusting method :
1) Adjust with RV001 on the VY-9 board so that it becomes 1.00±0.05 Vp-p.

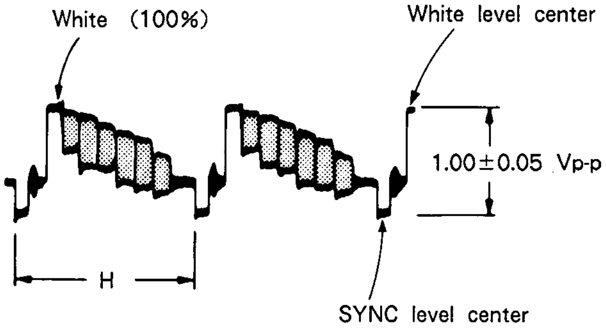


Fig. 9-16. PB Y level adjustment

9-4-9. Y FM Carrier Frequency Adjustment (VY-9/VI-48 Boards)

Mode	E-E
Signal	Non-signal
Measurement Point	Pin ㉙ on VY-9 board (REC Y RF)
Measuring Instrument	Frequency counter
Adjusting Element	RV004 on VY-9 board
Specified Value	4.20±0.03 MHz

Adjusting method :
1) Set RV003 (AC CLIP) on the VY-9 board to the mechanical center.(The slide pin of RV003 is approx. 2.7 Vdc.)
2) Adjust with RV004 on the VY-9 board so that it becomes 4.20±0.03 MHz.
3) Be sure to perform the "Deviation adjustment" and "AC clip adjustment".

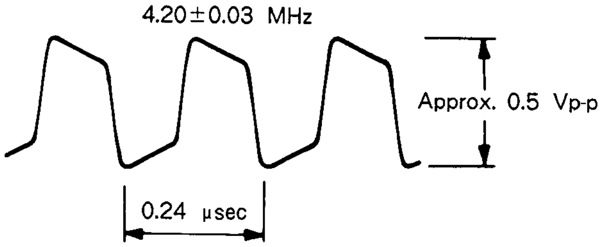


Fig. 9-17. Y FM currier frequency adjustment

9-4-10. Y FM Deviation Adjustment (VY-9/VI-48 Boards)

Mode	REC and playback
Signal	Colour bar
Measurement Point	TP208 on VI-48 board (Pin ① of CN204 (VIDEO OUT))
Measuring Instrument	Oscilloscope
Adjusting Element	RV002 on VY-9 board
Specified Value	Playback level : 1.00±0.05 Vp-p

Note : 1) Be sure that the "VIDEO OUT level adjustment", "PB Y level adjustment" and "Y FM carrier frequency adjustment" have been completed.
2) Be sure that the VIDEO OUT terminal (J381 on the SC-9 board) is terminated by 75 Ω.
3) Be sure the EDIT switch (S310 on the SK-22 board) is turned OFF.

Adjusting method :
1) Record the colour bar signal.
2) Play back the recorded section.
3) Be sure to check the playback output level.
Specified value : 1.00±0.05 Vp-p
4) When the specified value is not satisfied, repeat 1) through 3) after turning RV002 on the VY-9 board in the following manner.

	Turning direction of RV002
When larger than the specified value	Clockwise (↻)
When smaller than the specified value	Counterclockwise (↺)

Table. 9-1.

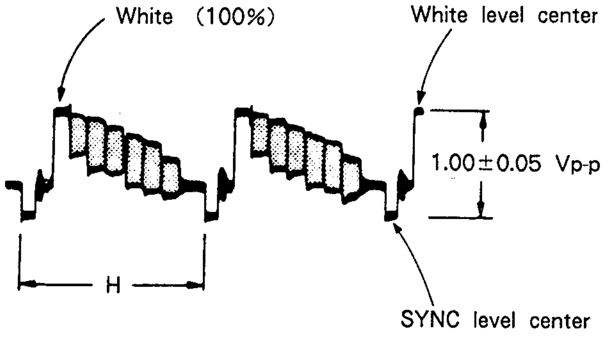


Fig. 9-18. Y FM deviation adjustment

9-4-11. AC Clip Adjustment (VY-9/VI-48 Boards)

Mode	E-E
Signal	Colour bar
Measurement Point	Pin ㉟ on VY-9 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV003 on VY-9 board
Specified Value	245±10%

Adjusting method :
1) Adjust with RV003 on the VY-9 board so that the peak of the white 100% becomes 245±10%.

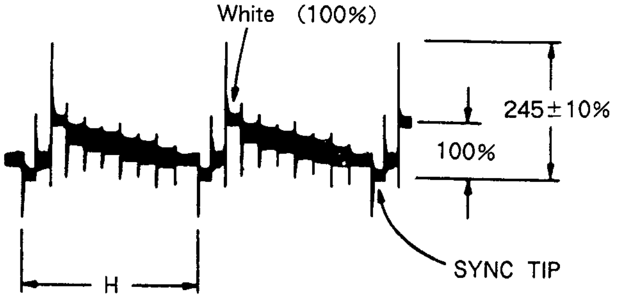


Fig. 9-19. AC clip adjustment

9-4-12. $375f_H$ VCO Adjustment (VC-11/VI-48 Boards)

Mode	E-E
Signal	Colour bar
Measurement Point	Pin (60) on VC-11 board
Measuring Instrument	Digital voltmeter
Adjusting Element	RV002 on VC-11 board
Specified Value	3.0±0.4 Vdc

Adjusting method :
1) Adjust with RV002 on the VC-11 board so that it becomes 3.0±0.4 Vdc.

9-4-13. Chroma Emphasis fo Adjustment (VI-48 Board)

Mode	E-E
Signal	Colour bar
Measurement Point	Pin ⑧ on VC-11 board
Measuring Instrument	Oscilloscope
Adjusting Element	FL203 on VI-48 board
Specified Value	Be sure to confirm that the fo component is minimum and zero cross appears between green and magenta.

Connection :

1) Connect Pin ⑪ (ACC) on the VC-11 board and Pin ③ (PB VI RF) of the W201 with a 1 kΩ resistor.

Adjusting method :

1) Adjust with FL203 on the VI-48 board so that the amplitude of the flat cyan portion of the chroma signal becomes minimum.
At this point, be sure to confirm that the zero cross appears between the green and magenta.

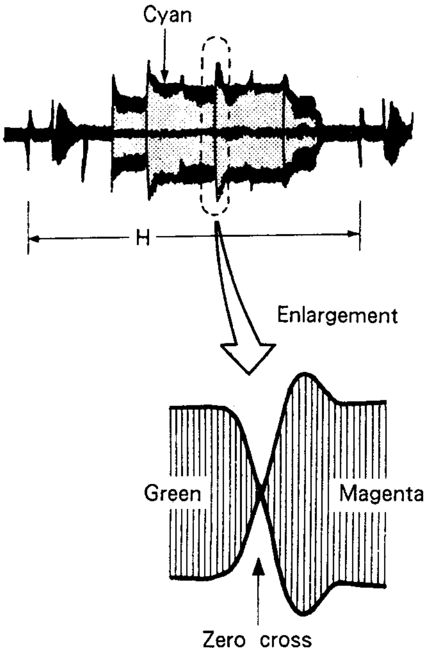


Fig. 9-20. Chroma emphasis fo adjustment

9-4-14. Carrier Balance Adjustment (VC-11/VI-48 Boards)

Mode	E-E
Signal	Colour bar
Measurement Point	Pin (64) on VC-11 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV001 on VC-11 board
Specified Value	Minimize 5.17 MHz signal component

Adjusting method :

1) Adjust with RV001 on the VC-11 board so that the 5.17 MHz signal component becomes minimum.

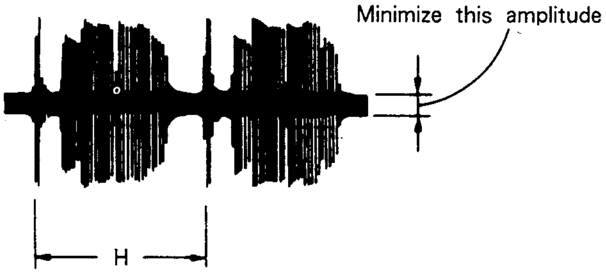
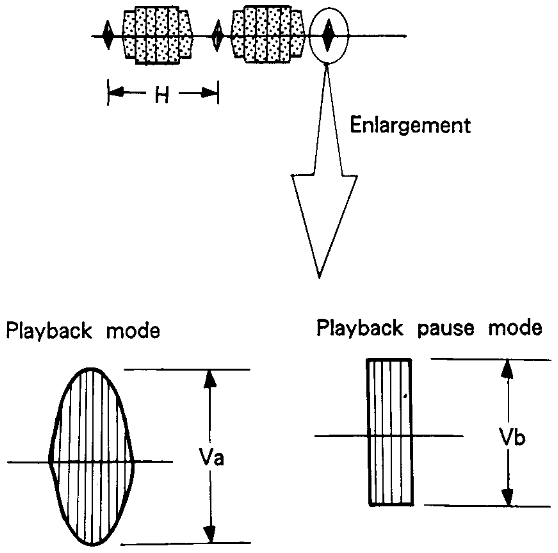


Fig. 9-21 Carrier balance adjustment

9-4-15. GCA GAIN Adjustment (VC-11/VI-48 Boards)

Mode	Playback and playback pause
Signal	Alignment tape : For operation check (WR5-3CSP) Colour bar section
Measurement Point	Pin ⑮ on VC-11 board
Measuring Instrument	Oscilloscope
Adjusting Element	RV003 on VC-11 board
Specified Value	Vb= (Va−20) ±15 mVp-p Va : Peak level of burst signal at playback mode Vb : Peak level of burst signal at playback pause mode

Adjusting method :
1) Set to playback mode.
2) Measure the peak level of burst signal.
3) Set to playback pause mode.
4) Adjust RV003 so that the peak level of burst signal is lower 20 mV than Va.



Vb=Va−20 mV′

Fig. 9-22. GCA GAIN adjustment

9-4-16. fH VCO Adjustment (VC-11/VI-48 Boards)

Mode	E-E
Signal	Colour bar
Measurement Point	CH1 : Pin (53) on VC-11 board CH2 : TP208 (Pin ① of CN204 on VI-48 board (VIDEO OUT))
Measuring Instrument	Oscilloscope
Adjusting Element	RV004 on VC-11 board
Specified Value	14.5±0.2 µsec

Adjusting method :
1) Adjust RV004 on the VC-11 board so that the TR of CH1 is 14.5±0.2 µsec.
2) Confirm that the H (time) of CH1 and CH2 is stable.

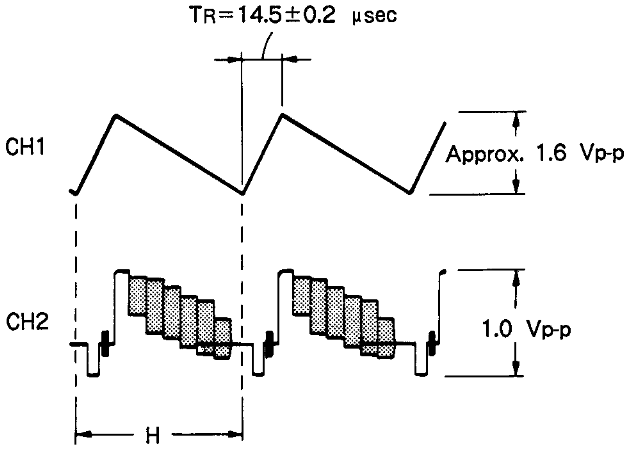


Fig. 9-23. fH VCO adjustment

9-4-17. REC Y Recording Current Adjustment (RP-59/RP-66 Boards)

Mode	REC
Signal	Non-signal
Measurement Point	Pin ① of CN103 on RP-66 board (CH1 CHECK)
Measuring Instrument	Oscilloscope
Adjusting Element	RV001 (REC VI) on RP-59 board
Specified Value	220 mVp-p

Note : Be sure to always perform the adjustment of the respective recording currents of the REC C, REC AFM after the REC Y recording current adjustment has been completed.

Adjusting method :

1) Adjust with RV001 on the RP-59 board so that it becomes 220 mVp-p.

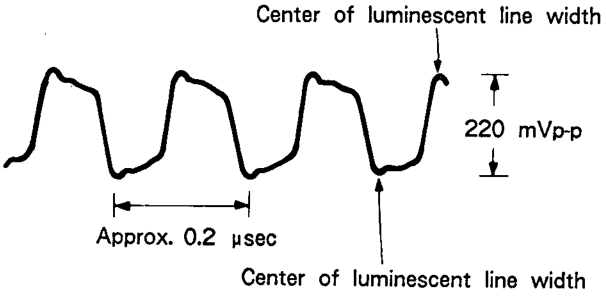

Center of luminescent line width
220 mVp-p
Approx. 0.2 μsec
Center of luminescent line width

Fig. 9-24. REC Y recording current adjustment

9-4-18. REC C Recording Current Adjustment (RP-66 Board)

Mode	REC
Signal	Colour bar
Measurement Point	Pin ① of CN103 (CH1 CHECK)
Measuring Instrument	Oscilloscope
Adjusting Element	RV102
Specified Value	44±5 mVp-p

Note : 1) Be sure to perform REC AFM recording current adjustment after REC C recording current adjustment.

2) Use MP-type tape.
(Pin ⑤ of W202 must be "L".)

Connections :

1) In order to eliminate other recording signals and to stop oscillation of flying erase, connect the following four places by jumper wire.
   - Pin ⑥ of W202 (REC Y RF) —— Pin ① of W202 (R/P 5V)
   - Pin ⑦ of W202 (REC ATF RF) —— GND (TP101)
   - Pin ⑧ of W202 (REC AFM RF) —— GND (TP101)
   - Base of Q130 —— Emitter of Q130

Adjusting method :

1) Adjust with RV102 to 44±5 mVp-p.

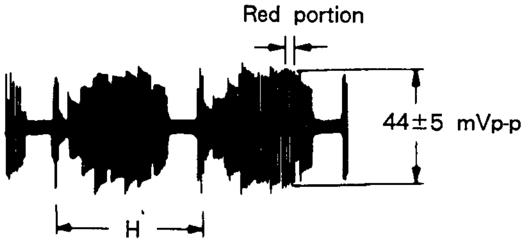


Fig. 9-25. REC C recording current adjustment

9-4-19. REC AFM Recording Current Adjustment (AU-48 Board)

Mode	REC
Signal	Non-signal
Measurement Point	Pin ① of CN103 on RP-66 board (CH1 CHECK)
Measuring Instrument	Oscilloscope
Adjusting Element	RV401 on AU-48 board
Specified Value	10±1 mVp-p

Note : 1) Use MP-type tape.
(Pin ⑤ of W202 on RP-66 board must be "L".)
2) When the signal level of Pin ① of CN103 is too low to read easily, make direct connection using a 100 Ω resistor as shown below rather than using the 10 : 1 probe.

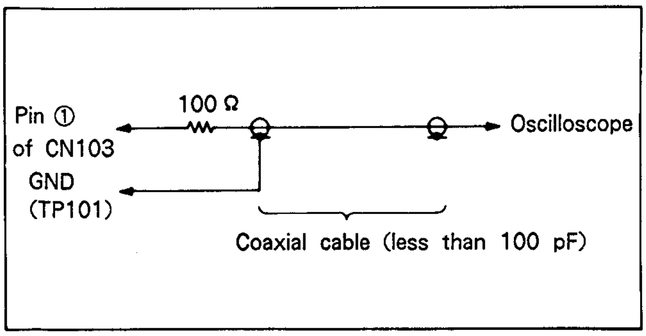


Fig. 9-26.

Connections :
1) In order to eliminate other recording signals and to stop oscillation of flying erase, connect the following three places on the RP-66 board by jumper wires.
- Pin ⑥ of W202 (REC Y RF)
  —— Pin ① of W202 (R/P 5V)
- Pin ⑦ of W202 (REC ATF RF)
  —— GND (TP101)
- Base of Q130 —— Emitter of Q130

Adjusting method :
1) Adjust with RV401 on the AU-48 board to 10±1 mVp-p.

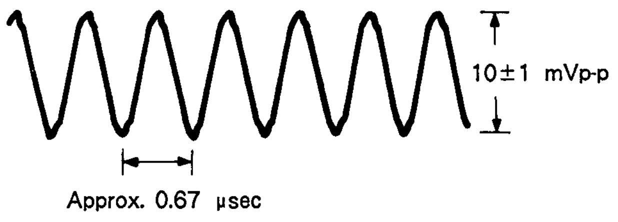


Fig. 9-27. REC AFM recording current adjustment

9-4-20. REC ATF Recording Level Check (VI-48 Board)

Mode	REC (SP mode)
Signal	Colour bar
Measurement Point	Pin ⑬ of W205 (REC ATF RF)
Measuring Instrument	Oscilloscope
Specified Value	$680 {}^{+70}_{-50}$ mVp-p

Checking method :
1) Set the SP/LP switch (S309 on the SK-22 board) to the SP position.
2) Check that the REC ATF RF signal level is $680 {}^{+70}_{-50}$ mVp-p.

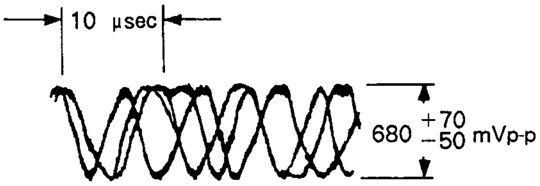


Fig. 9-28. REC ATF recording level check

9-4-21. REC PCM Recording Current Adjustment (RP-59/RP-66 Board)

Mode	REC
Signal	Non-signal
Measurement Point	Pin ① of CN103 on RP-66 board (CH1 CHECK)
Measuring Instrument	Oscilloscope
Adjusting Element	RV002 on RP-59 board
Specified Value	220 mVp-p

Connections :
1) In order to eliminate other recorded signals, connect TP103 (PCM ONLY) on the RP-66 board with GND through a 0.01 μF capacitor.

Adjusting method :
1) Adjust with RV002 on the RP-59 board so that it becomes 220 mVp-p.

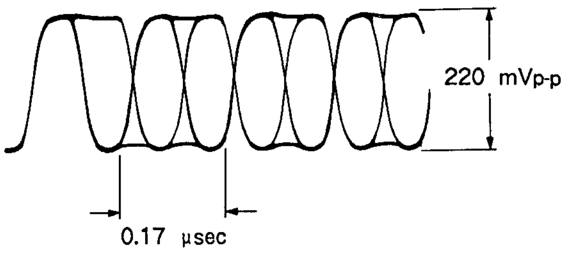


Fig. 9-29. REC PCM recording current adjustment

9-5. AUDIO SYSTEM ADJUSTMENT

- Perform adjustment using colour bar signal for video signal input.

[Connection of instruments for audio measurement]
In addition to the video system measurement instruments , the audio system measurement instruments are connected as shown in the Fig. below, and adjustment is made in the VTR mode.

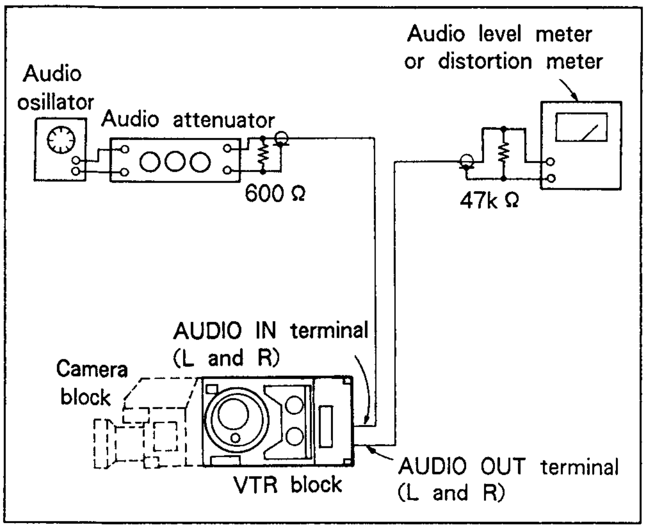

Audio oscillator
Audio attenuator
600 Ω
Audio level meter or distortion meter
47k Ω
AUDIO IN terminal (L and R)
Camera block
VTR block
AUDIO OUT terminal (L and R)

Fig. 9-30.

9-5-1. PCM Audio System Adjustment

Unless indicated otherwise, the VTR switches and controls are set to the following positions during adjustment.

- Audio monitor (PCM/MIX/STD) switch······PCM
- REC LEVEL control······Position at which AUDIO OUT terminal level becomes −10 dBs when 400 Hz, −10 dBs signal is input to AUDIO IN terminal.

Note : 1) The adjusting element for the R channel is shown in [ ].
2) Refer to the following diagram of measurement points when performing "PCM Master Clock Adjustment", "PCM Playback VCO Free Oscillation Frequency Adjustment", and "PCM Offset Adjustment".

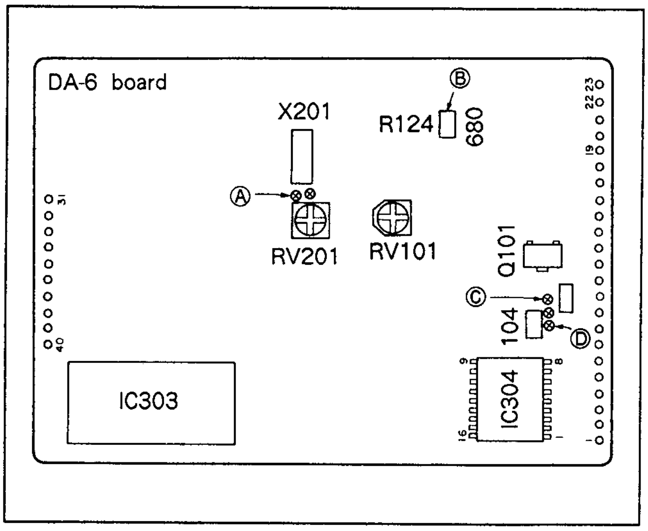

DA-6 board
Ⓑ
X201
R124
680
Ⓐ
RV201
RV101
Q101
Ⓒ
104
Ⓓ
IC303
IC304

Fig. 9-31.

[Adjusting procedure]

1) PCM DC - DC convertor output voltage adjustment
2) PCM master clock oscillation frequency adjustment
3) REC PCM level check
4) PCM playback VCO free oscillation frequency adjustment
5) PCM playback level adjustment
6) E-E output level check
7) PCM offset adjustment
8) PCM recording level adjustment
9) Overall frequency characteristics check
10) Overall distortion check
11) Overall noise level check
12) Level meter adjustment

1. PCM DC/DC converter output voltage adjustment (CC-13 Board)

Mode	E-E
Signal	Arbitrary
Measurement Point	Pin ① of CN902
Measuring Instrument	Digital voltmeter
Adjusting Element	RV904
Specified Value	8.6±0.1 Vdc

Adjusting method :

1) Adjust RV904 so that 8.6±0.1 Vdc is obtained.

2. PCM master clock oscillation frequency adjustment (DA-6/PC-32 boards)

Mode	REC
Signal	No-signal
Measurement Point	Oscilloscope : Through hole Ⓐ of DA-6 board (Refer to Fig. 7-31)
Measuring Instrument	Frequency counter : Pin ① of IC304 on DA-6 board
Adjusting Element	RV201 on DA-6 board
Specified Value	4.9±0.2 msec

Adjusting method :

1) Set the "L" level pulse width to 4.9±0.2 msec by RV201 on the DA-6 board.
2) Confirm that the clock frequency is 11.50 MHz and is stable.

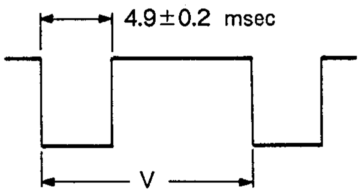


Fig. 9-32. PCM master clock oscillation frequency adjustment

3. REC PCM level check (DA-6/PC-32 boards)

Mode	REC
Signal	No-signal
Measurement Point	Pin ⑲ on DA-6 board
Measuring Instrument	Oscilloscope
Specified Value	Approx. 0.4 Vp-p

Checking method :

1) Confirm that the REC PCM level is approx. 0.4 Vp-p.

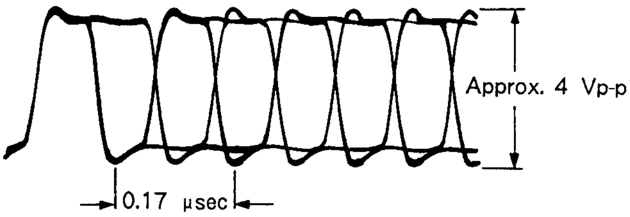


Fig. 9-33. REC PCM level check

4. PCM playback VCO free oscillation frequency adjustment (DA-6/PC-32 boards)

Mode	Playback
Signal	Any tape
Measurement Point	R124 (Ⓑ in Fig. 7-31) on DA-6 board
Measuring Instrument	Frequency counter
Adjusting Element	RV101 on DA-6 board
Specified Value	11.50±0.05 MHz

Adjusting method :

1) Adjust to 11.50±0.05 MHz using RV101 on the DA-6 board.

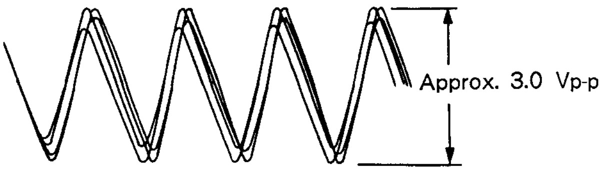


Fig. 9-34. PCM playback VCO free oscillation frequency adjustment

5. PCM playback level adjustment (DA-6/PC-32 boards)

Mode	Playback
Signal	Alignment tape : For operation check (WR5-3CSP) Monoscope signal section
Measurement Point	AUDIO OUT terminal L [R]
Measuring Instrument	Audio level meter
Adjusting Element	RV405 on DA-6 board
Specified Value	−10.0±0.1 dBs

Adjusting method :

1) Adjust to −10.0±0.1 dBs by RV405.

Note : When there is a difference in the levels of the L and R channels, adjust to the center value.

6. E-E output level check

Mode	E-E
Signal	400Hz, −10 dBs : AUDIO IN terminal L [R]
Measurement Point	AUDIO OUT terminal L [R]
Measuring Instrument	Audio level meter
Specified Value	0±1.5 dBs

Checking method :

1) Rotate the REC LEVEL knob fully in the clockwise direction (↻).
2) Confirm that the level at AUDIO OUT terminal L [R] is 0±1.5 dBs.

7. PCM offset adjustment (DA-6/PC-32 Boards)

Mode	Recording
Signal	No-signal
Measurement Point	CH1 : Through hole Ⓒ (ADDA) of DA-6 board CH2 : Through hole Ⓓ (WCK) of DA-6 board • Refer to Fig. 9-31
Measuring Instrument	Oscilloscope
Adjusting Element	RV401 [RV402] on DA-6 board
Specified Value	Even brightness of upper and lower luminance lines

Note : Perform adjustment for channel L and channel R alternately as they affect each other.

Adjusting method :

1) Set the REC LEVEL knob to its lowest position.
2) Make the brightness of upper and lower luminance lines the same by RV401 [RV402].

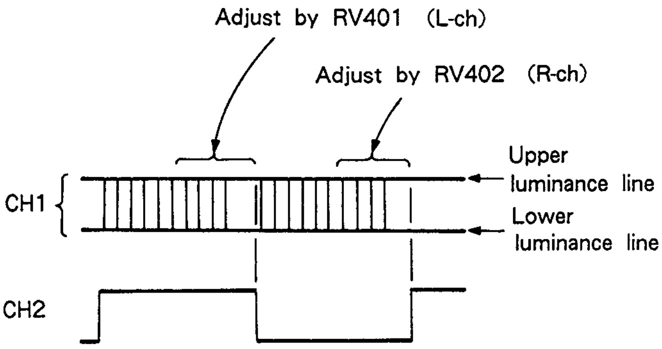


Fig. 9-35. PCM offset adjustment

8. PCM recording level adjustment (DA-6/PC-32 boards)

Mode	Self-recording and playback
Signal	400Hz, −10 dBs : AUDIO IN terminal L [R]
Measurement Point	AUDIO OUT terminal L [R]
Measuring Instrument	Audio level meter
Adjusting Element	RV403 [RV404] on DA-6 board
Specified Value	−10±0.5 dBs

Note : Make sure that " PCM Playback Level Adjustment" has been completed.

Adjusting method :

1) Set to the E-E mode.
2) Use the REC LEVEL knob to adjust the output level at AUDIO OUT terminal L [R] to −10 dBs.
3) Record the signal.
4) Playback the recorded section.
5) Confirm that the output level at AUDIO OUT terminal L [R] is −10±0.5 dBs.
6) If the specified value is not satisfied, repeat steps 1) through 5) after adjusting RV403 [RV404].

9. Overall frequency characteristics check

Mode	Self-recording and playback
Signal	Ⓐ 400Hz, −20 dBs Ⓑ 20Hz, −20 dBs Ⓒ 14 kHz, −20 dBs : AUDIO IN terminal L [R]
Measurement Point	AUDIO OUT terminal L [R]
Measuring Instrument	Audio level meter
Specified Value	20Hz playback output level is 0^{+2}_{-3} dB and 14 kHz playback level is 0^{+2}_{-3} dB when the 400Hz playback output level is 0 dB

Checking method :

1) Adjust the REC LEVEL knob so that the output level at AUDIO OUT terminal L [R] is −20 dBs.
2) Record signals Ⓐ through Ⓒ in order.
3) Playback the recorded sections.
4) Confirm that the 20 Hz playback output level is 0^{+2}_{-3} dB and 14 kHz playback level is 0^{+2}_{-3} dB when the 400 Hz playback output level is 0 dB.

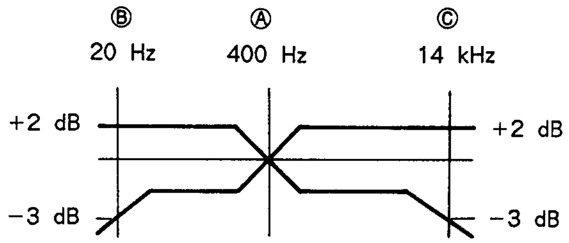


Fig. 9-36. Overall frequency characteristics check

10. Overall distortion check

Mode	Self-recording and playback
Signal	1 kHz, −10 dBs : AUDIO IN terminal L [R]
Measurement Point	AUDIO OUT terminal L [R]
Measuring Instrument	Distortion meter
Specified Value	Less than 0.35% *1

Checking method :

1) Adjust the REC LEVEL knob so that the output level of AUDIO OUT terminal L [R] is −10 dBs.
2) Record the signal.
3) Playback the recorded section.
4) Make sure that the distortion is less than 0.35%. *1

*1 Value when 30 kHz LPF is used.

11. Overall noise level check

Mode	Self-recording and playback
Signal	No-signal • Insert the shorting plug to AUDIO IN terminal L or R
Measurement Point	AUDIO OUT terminal L [R]
Measuring Instrument	Audio level meter
Specified Value	Less than −85 dBs *2

Checking method :

1) Record the signal.
2) Playback the recorded section.
3) Make sure that the noise level is less than −85 dBs.

*2 Value when IHF-A hearing correction filter is used

12. Level meter adjustment (PC-32 Board)

Mode	E-E
Signal	AUDIO IN terminal L [R] : 400Hz, −10 dBs
Measurement Point	AUDIO OUT terminal L [R]
Measuring Instrument	Audio level meter
Adjusting Element	RV002 [RV003]
Specified Value	Level meter on video camera recorder indicates −10 dB.

Adjusting method :

1) Adjust the REC LEVEL knob so that the signal level of AUDIO OUT terminal L [R] is −10 dBs.
2) Adjust RV002 [RV003] so that level meter L [R] of the camera video recorder indicates −10dB.

9-5-2. AFM Audio System Check

Note : 1) The audio signal is input simultaneously to the AUDIO IN terminals L and R.
2) Set the AUDIO MONITOR switch to the "STD" position for checking.

1. AFM carrier frequency check (AU-48 board)

Mode	REC (SP mode)
Signal	Non-signal
Measurement Point	Pin ② of W401 (REC AFM RF)
Measuring Instrument	Frequency counter
Specified Value	1.500±0.002 MHz

Checking method :

1) Turn OFF the audio oscillation output.
2) Confirm that the AFM carrier frequency is 1.500 ±0.002 MHz.

2. AFM deviation check (AU-48 board)

Mode	Playback
Signal	Alignment tape : For operation check (WR5-3CSP)
Measurement Point	AUDIO LINE OUT (L) or AUDIO LINE OUT (R)
Measuring Instrument	Audio level meter
Specified Value	−10±1.5 dBs

Checking method :

1) Confirm that the audio line output level is −10 ±1.5 dBs.

3. E-E output level check

Mode	E-E
Signal	400 Hz, −10 dBs
Measurement Point	AUDIO LINE OUT (L) or AUDIO LINE OUT (R)
Measuring Instrument	Audio level meter
Specified Value	−10±2 dBs

Checking method :

1) Be sure the audio output level is −10±2 dBs.

4. Overall level characteristics check

Mode	Self-recording and playback
Signal	400 Hz, −10 dBs
Measurement Point	AUDIO LINE OUT (L) or AUDIO LINE OUT (R)
Measuring Instrument	Audio level meter
Specified Value	−10±1.5 dBs

Checking method :

1) Record the signal.
2) Play back the recorded section.
3) Be sure the audio output level is −10±1.5 dBs.

5. Overall frequency characteristics check

Mode	Self-recording and playback
Signal	Ⓐ 400 Hz, −20 dBs Ⓑ 30 Hz, −20 dBs Ⓒ 14 kHz, −20 dBs
Measurement Point	AUDIO LINE OUT (L) or AUDIO LINE OUT (R)
Measuring Instrument	Audio level meter
Specified Value	When the 400 Hz playback output level is specified as 0 dB, the playback output levels of 30 Hz and 14 kHz become both 0±3 dB.

Checking method :

1) Record the signals of Ⓐ to Ⓒ in sequence.
2) Play back the recorded section.
3) Be sure that when the 400 Hz playback output level is specified as 0 dB, the playback output levels of 30 Hz and 14 kHz becomes both 0±3 dB.

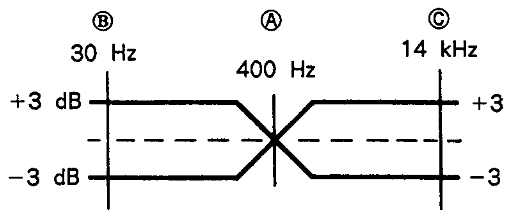


Fig. 9-37. AFM overall frequency characteristics

6. Overall distortion check

Mode	Self-recording and playback
Signal	400 Hz, −10 dBs
Measurement Point	AUDIO LINE OUT (L) or AUDIO LINE OUT (R)
Measuring Instrument	Distortion meter
Specified Value	Less than 0.5% *1

Checking method :

1) Record the signal.
2) Play back the recorded section.
3) Be sure the distortion is less than 0.5% *1.

*1 Value when 30 kHz LPF used.

7. Overall noise level check

Mode	Self-recording and playback
Signal	Non-signal • Insert the shoting plug to AUDIO IN terminal L or R
Measurement Point	AUDIO LINE OUT (L) or AUDIO LINE OUT (R)
Measuring Instrument	Audio level meter
Specified Value	Less than −66 dBs *2

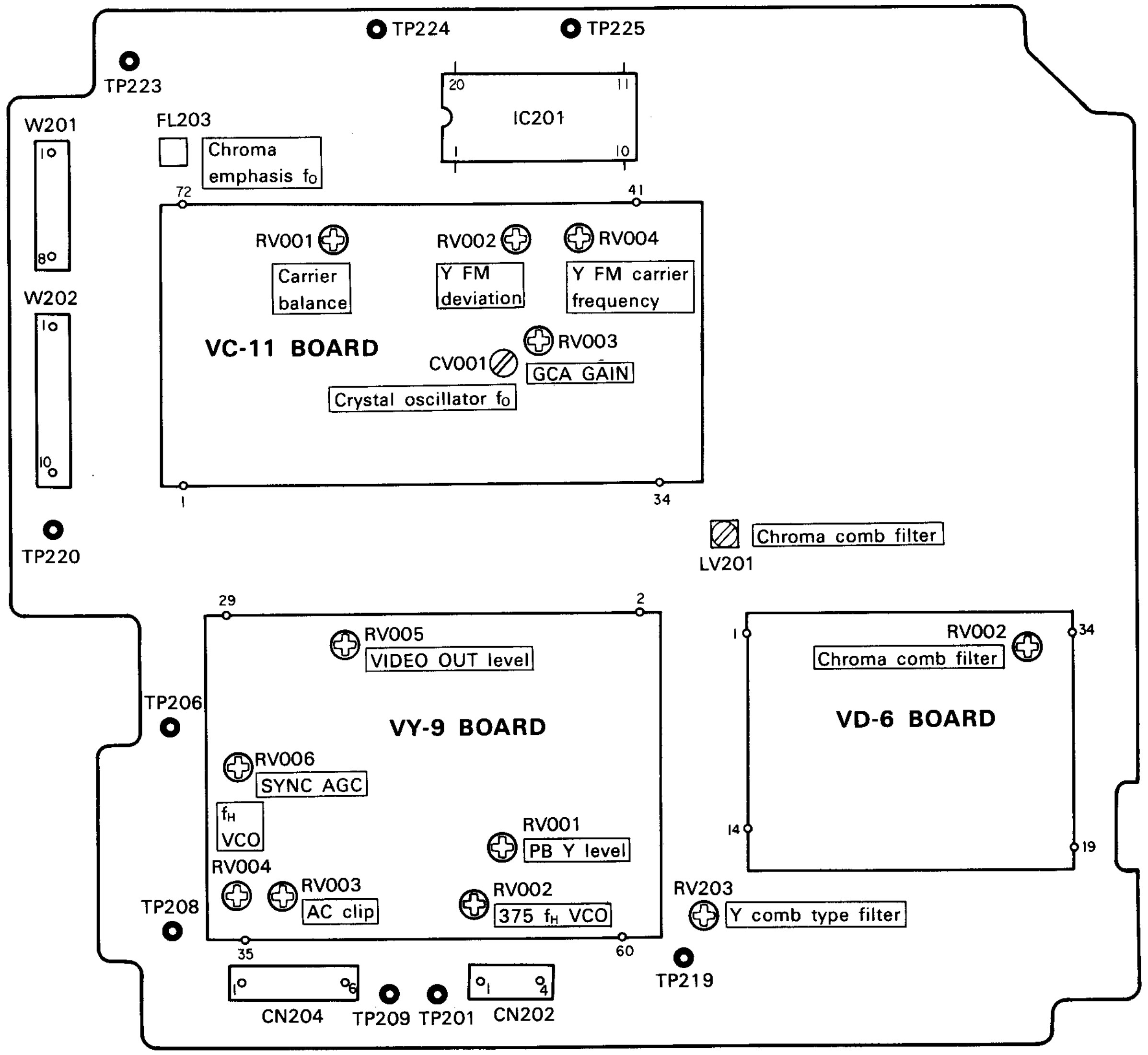
Checking method :

1) Record the signal.
2) Play back the recorded section.
3) Be sure the noise level is less than −66 dBs. *2

*2 : The value when an IHF-A listening sensitivity correction filter is used.

ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

VI-48 BOARD (COMPONENT SIDE)


TP224
TP225
TP223
IC201
20
11
1
10
W201
FL203
Chroma emphasis fo
72
41
RV001
Carrier balance
RV002
Y FM deviation
RV004
Y FM carrier frequency
W202
VC-11 BOARD
RV003
GCA GAIN
CV001
Crystal oscillator fo
1
34
TP220
LV201
Chroma comb filter
29
2
RV005
VIDEO OUT level
VY-9 BOARD
RV006
SYNC AGC
fH VCO
RV004
RV003
AC clip
RV001
PB Y level
RV002
375 fH VCO
35
60
RV002
Chroma comb filter
VD-6 BOARD
1
34
14
19
RV203
Y comb type filter
TP206
TP208
CN204
TP209
TP201
CN202
TP219

d playback
s
T (L) or
T (R)
*1

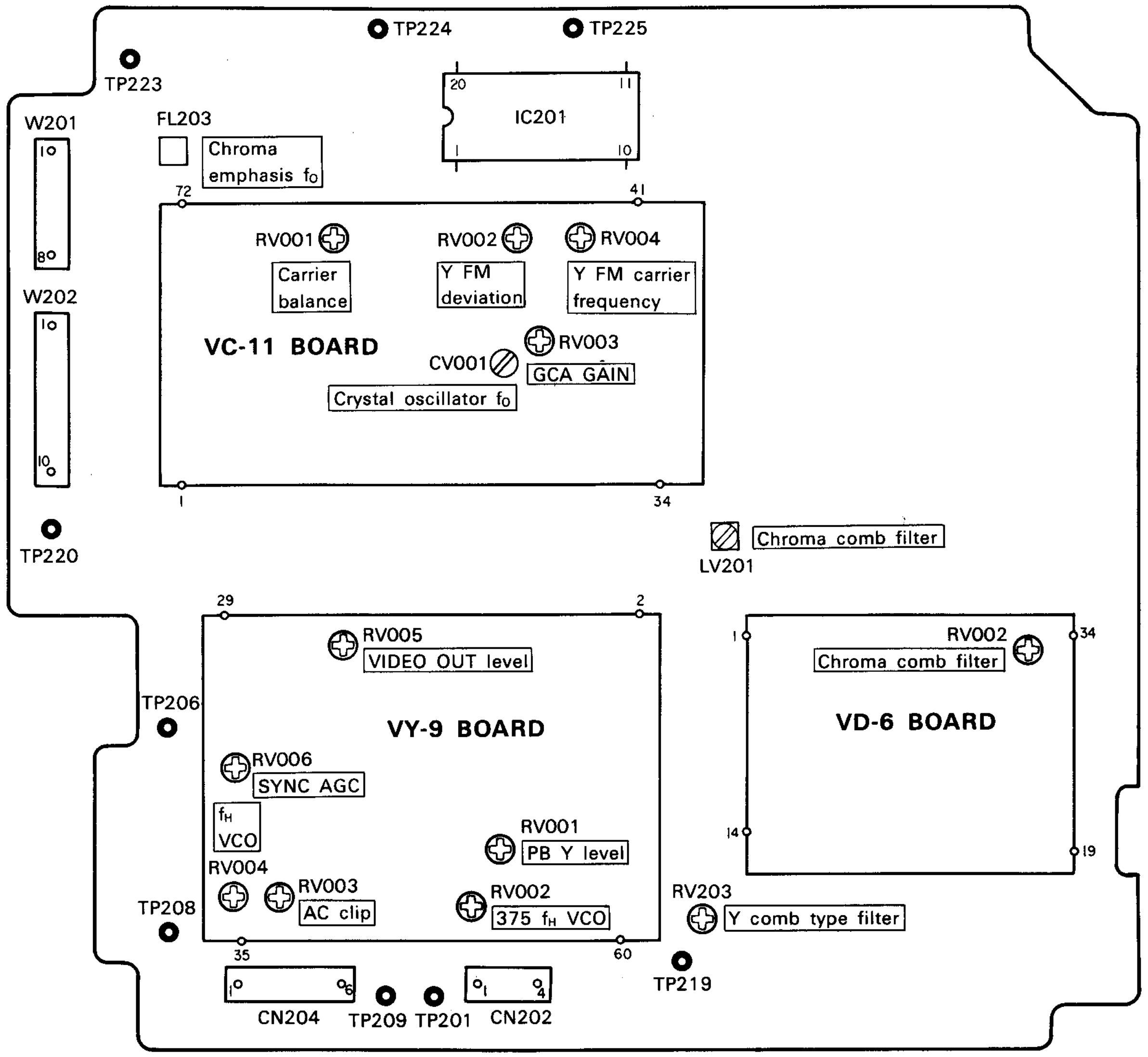
).5% *1.

playback
ing plug
erminal L
T (L) or
T (R)
Bs *2

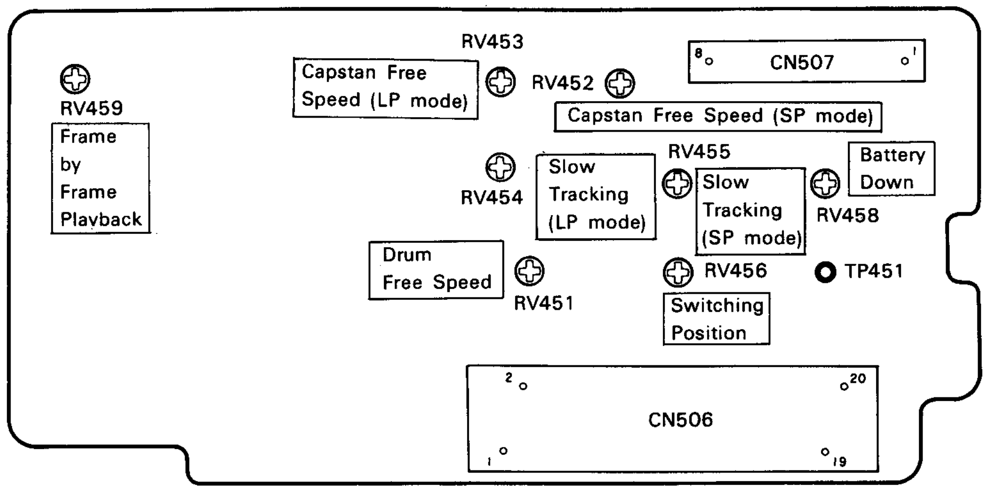
66 dBs. *2
sensitivity

ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

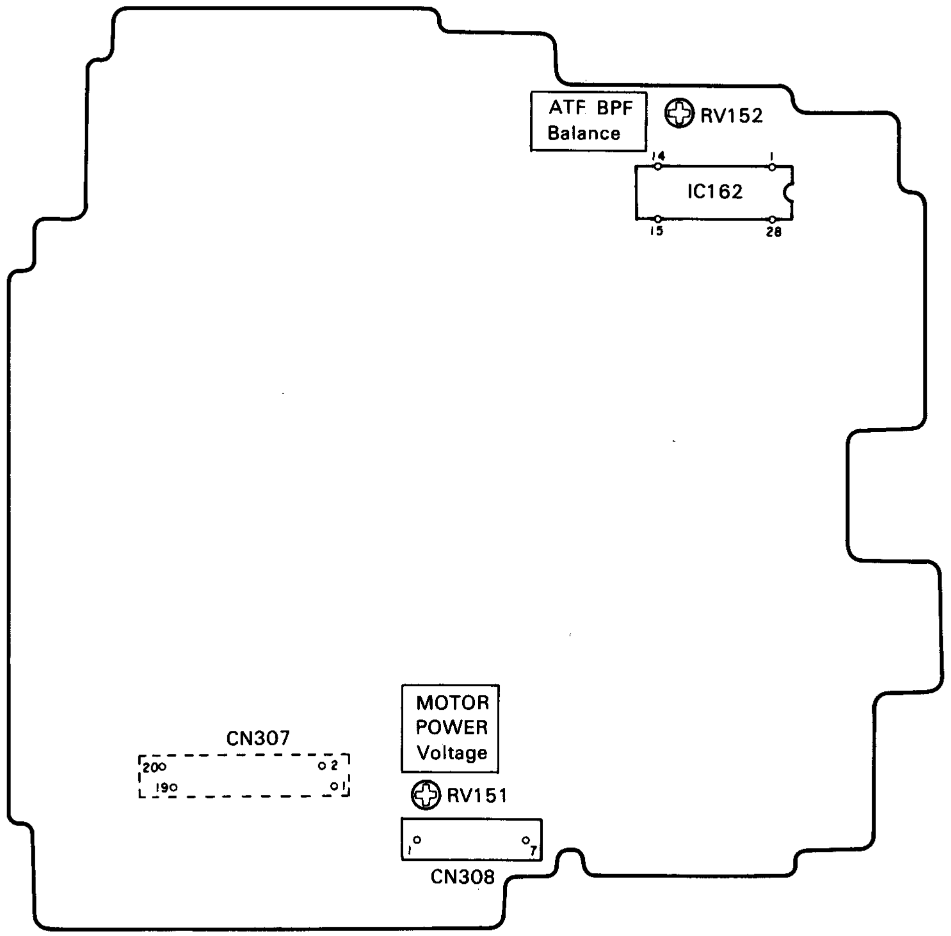
VI-48 BOARD (COMPONENT SIDE)


TP223
TP224
TP225
IC201
W201
FL203
Chroma emphasis f0
W202
RV001
Carrier balance
RV002
Y FM deviation
RV004
Y FM carrier frequency
VC-11 BOARD
CV001
RV003
GCA GAIN
Crystal oscillator f0
TP220
Chroma comb filter
LV201
RV005
VIDEO OUT level
VY-9 BOARD
RV002
Chroma comb filter
VD-6 BOARD
TP206
RV006
SYNC AGC
fH VCO
RV004
RV003
AC clip
RV001
PB Y level
RV002
375 fH VCO
RV203
Y comb type filter
TP208
TP219
CN204
TP209
TP201
CN202

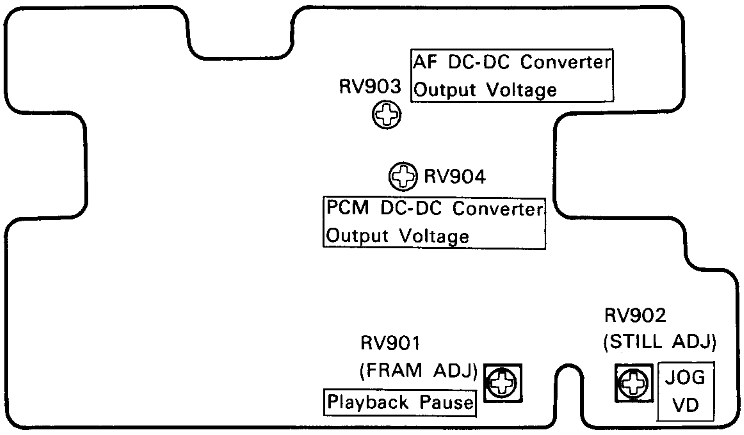
TS-80 BOARD (COMPONENT SIDE)


RV459
Frame by Frame Playback
RV453
Capstan Free Speed (LP mode)
RV452
CN507
Capstan Free Speed (SP mode)
RV454
Slow Tracking (LP mode)
RV455
Slow Tracking (SP mode)
Battery Down
RV458
Drum Free Speed
RV451
RV456
Switching Position
TP451
CN506

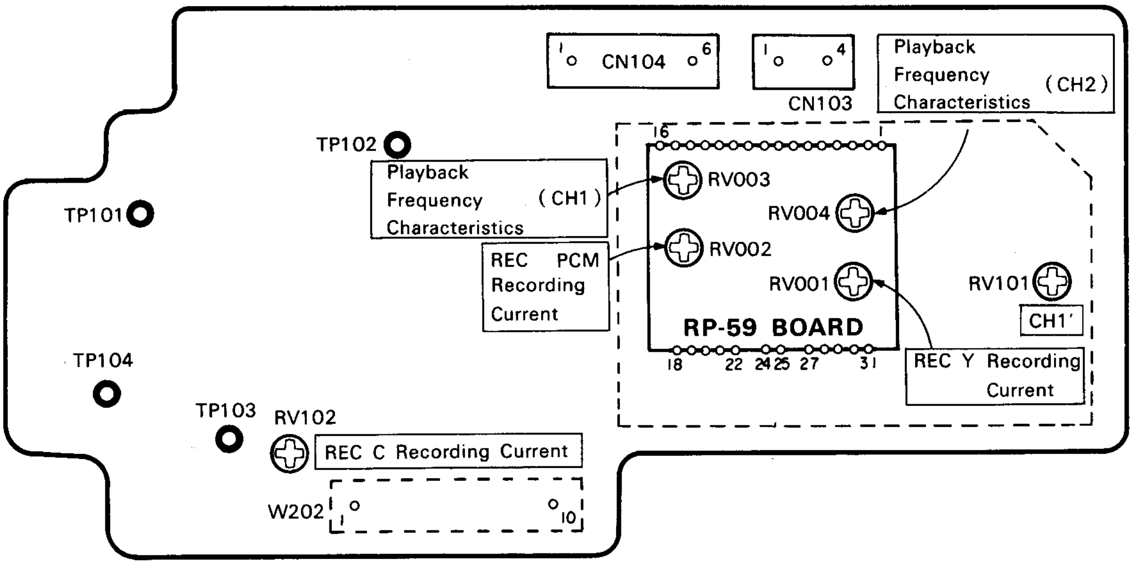
SS-83 BOARD (COMPONENT SIDE)


ATF BPF Balance
RV152
IC162
CN307
MOTOR POWER Voltage
RV151
CN308

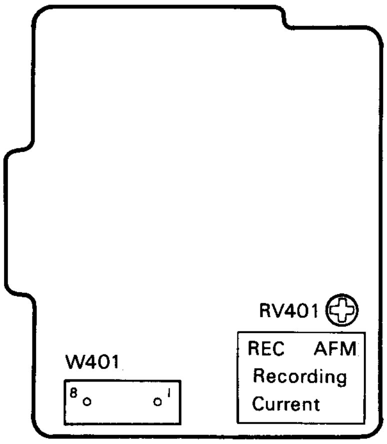
CC-13 BOARD (COMPONENT SIDE)


AF DC-DC Converter
Output Voltage
RV903
RV904
PCM DC-DC Converter
Output Voltage
RV902
(STILL ADJ)
RV901
(FRAM ADJ)
Playback Pause
JOG
VD

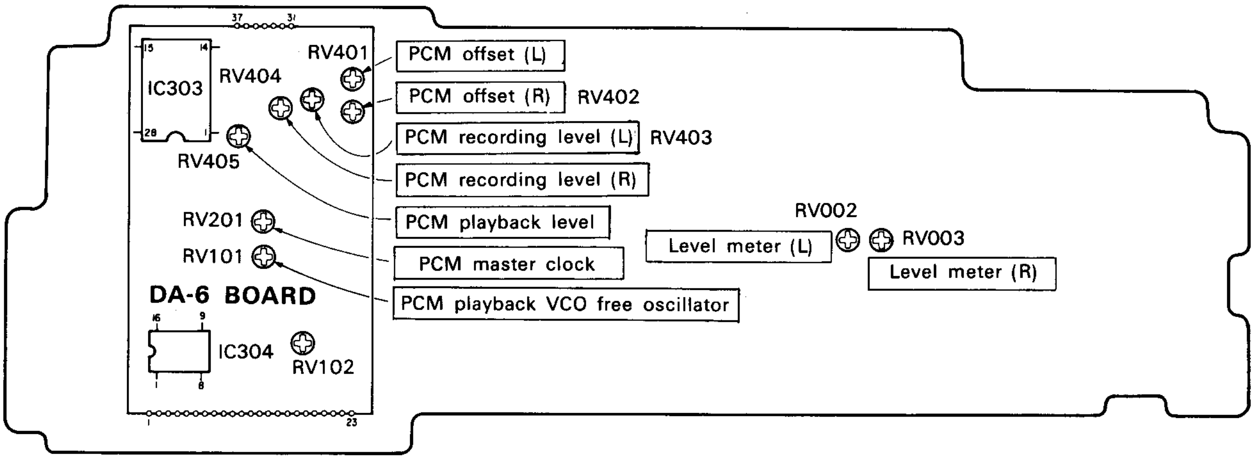
RP-66 BOARD (COMPONENT SIDE)


CN104
1
6
1
4
CN103
Playback
Frequency
Characteristics
(CH2)
TP102
TP101
Playback
Frequency
Characteristics
(CH1)
16
RV003
RV004
RV002
REC PCM
Recording
Current
RV001
RV101
CH1'
RP-59 BOARD
18
22
24
25
27
31
REC Y Recording
Current
TP104
TP103
RV102
REC C Recording Current
W202
1
10

AU-48 BOARD (COMPONENT SIDE)


RV401
REC AFM
Recording
Current
W401
8
1

PC-32 BOARD (COMPONENT SIDE)


37
31
15
14
IC303
28
1
RV404
RV401
PCM offset (L)
PCM offset (R)
RV402
PCM recording level (L)
RV403
RV405
PCM recording level (R)
RV201
PCM playback level
RV101
PCM master clock
PCM playback VCO free oscillator
RV002
Level meter (L)
RV003
Level meter (R)
DA-6 BOARD
16
9
IC304
RV102
1
8
1
23